TAMILNADU ASSOCIATION OF INTELLECTUALS AND FACULTY (TAIF)

GRABS EDUCATIONAL CHARITABLE TRUST

Jointly Organized

GRABS VIRTUAL AWARDS - 2021

Best Faculty Award

Presented to

Dr. Ganesh Laxmanrao Pachkore

Associate Professor in Botany
Vasantdada Patil Arts, Commerce & Science College, Patoda. Dist- Beed.(M.S) India

In appreciation and recognition of outstanding contribution and continued dedication to the student community

We salute you, as corona warrior for your contribution in this critical situation of NOVEL CORONA (Covid-19) in lockdown period.

Issued on June 13, 2021 at Chennai

Dr. A. Balu
President - TAIF

Mr. A. Anthony Muthu
President - GRABS

19/05/2022 | INDIA | RWIN/21343

RECORD OWNER

PRESENTS

MULTIVERSE HONORS-22

BEST YOUNG ACADEMICIAN

DR.GANESH LAXMANRAO PACHKORE

Associate Professor & Vice -Principal

Department of Botany
Vasantdada Patil Arts, Commerce & Science College, Patoda
Dist- Beed .(MS) India

DR. D. C SINGH
CHIEF ADVISOR- R&D

MR. R. B SINGH
DIRECTOR

WWW.RECORDOWNER.COM
HOME OF WORLD RECORDS

ISSN: 0976-3031

Available Online at http://www.recentscientific.com

CODEN: IJRSFP (USA)

International Journal of Recent Scientific Research
Vol. 12, Issue, 07 (A), pp. 42205-42208 July, 2021

International Journal of Recent Scientific Research

DOI: 10.24327/IJRSR

Research Article

PHARMACOGNOSTIC STUDIES OF *VITEX NEGUNDO* LINN. FROM KALSUBAI REGION OF WESTERN GHAT

Shinde Y P[1]., Pachkore G L[2]., Dahikar S B[3]., Barwant M M[4]., Ugale Y S[5] Sutar N G[6]

[1,3 &5]Sanjivani Arts Commerce & Science College Kopargaon, Maharashtra India
[2]Vasantdada Patil Arts Commerce & Science College, Patoda, Beed, Maharashtra India
[6]Sanjivani College of Pharmaceutical Education and Research, Kopargaon Maharashtra India

DOI: http://dx.doi.org/10.24327/ijrsr.2021.1207.6047

ARTICLE INFO

Article History:

Received 4th April, 2021
Received in revised form 25th May, 2021
Accepted 18th May, 2021
Published online 28th June, 2021

Key Words:

VitexnegundoLinn., Medicinal Uses, Pharmacological study

ABSTRACT

The huge aromatic shrub Vitexnegundo Linn. is found throughout India. Rather than simply healing a disease, herbal medicine attempts to restore the body to its original state of health. It has been utilised as a feminine treatment and for pains in Ayurveda and Roman medicine since ancient times. The chaste berry tree was named after it. This species is found across Indo-Malesia and is grown in North America, Europe, Asia, and the West Indies. It may be found across the greater part of India, as well as in the outer Himalayas. Vitexnegundo Linn has a wide range of therapeutic qualities and the plant has also been extensively used in treatment of a plethora of ailments as traditional medicine, folk medicine and pharmacological evidence. Traditionally the leaves of Vitexnegundo Linn. are documented to possess antibacterial, antitumor, astringent, febrifuge, sedative, tonic and vermifuge. It has been reported to posses potent pharmacological properties. This research focuses mostly on the pharmacognistic aspects. Vitexnegundo Linn's traditional uses and pharmacological activities

INTRODUCTION

Uniyal *et al.* reaffirm a traditional Bangali proverb from the Western Himalayan region of India, which reads, "A man cannot die of disease in a place where Vitexnegundo, Adhatodavasica, and Acoruscalamus grow" (provided that he knows how to use them). The plant has a lot of potential as a common medicinal herb, and it's no wonder that it's known in Indian traditional circles as'sarvaroganivarini,' which means'remedy for all ailments.'

Taxonomical classification

Kingdom: Plantae- Plants
Subkingdom: Tracheobionta – Vascular plants
Super division: Spermatophyte – Seed plants
Division: Magnoliophyta – Flowering plants
Class: Magnoliopsida - Dicotyledons
Subclass: Asteridae
Order: Lamiales
Family: Verbenaceae - Verbena family
Genus: Vitex Linn.
Species: Vitexnegundo Linn. – (Chastetree)

Geographical distribution

Vitex usually grows from three to nine feet tall, but under cultivation can develop to 20 feet tall. Nirgundi occur in tropical to temperate regions (up to 2200 m from east to west) grows gregariously in wastelands and is also widely used as a hedge-plant. This species is globally distributed in Indo-Malesia, cultivated in America, Europe, Asia and West Indies. Within India, it is found throughout the greater part of India, ascending to an altitude of 1500 metres in the outer Himalayas. It is abundant in open-waste lands. Locally distributed throughout the State Maharashtra along the banks of rivers; very common near the sea-coast in tidal and beach-forests in Konkan; along Deccan rivers. Habitat found to be in Waste lands and moist situations. A small slender tree with quadrangular branchlets densely whitish, tomentosebranchlets distributed throughout India. It is often found growing next to streams and it loves water. Its distribution is near Bhandardhara dam, Thakarwadi, Kadgoop, Ratanwadi, Alanggad and Ratanwadi.

Corresponding author:* **Shinde Y P
Sanjivani Arts Commerce & Science College Kopargaon, Maharashtra India

Vitexnegundo **Linn.**

Pharmacognosy

Root: Roots are woody, fairly thick, 8-10 cm in diameter; external surface brownish, rough due to the presence of longitudinal fissures and a small rootlets. The bark is very thin and corky portion can be scrapped off easily. Transverse section shows outer cork consisting of 12- 20 rows of nearly cubical to rectangular cells, the cells of peripheral rows being thick walled but not lignified.

Stem Bark: Bark occurs in channelled pieces, 0.3- 0.5 cm thick; outer surface yellowish grey, rough, lenticelular, longitudinally channeled and transversely cracked; inner surface darker than outer, blackish and smooth; fracture short and splintery; taste slightly bitter. In transverse section the bark shows well developed periderm and secondary phloem elements.

Leaf Morphology: Leaves are palmately compound, petiole 2.5-3.8 cm long; 3-5 foliate; the middle leafletispetiolate; in trifoliate leaf, leaflet lanceolate or narrowly lanceolate, acute, entire or rarely crenate, middle leaflet 5-10 cm long and 1.6-3.2 cm broad, with 1-1.3 cm long petiolule, remaining two subsessile; in pentafoliate leaf inner three leaflets have petiolule and remaining two sub-sessile; Odour is agreeably aromatic surface glabrous above and tomentose beneath; texture, leathery.

Microscopy: Petiole shows single layered epidermis having a number of unicellular, bicellular and uniseriate multicellular covering trichomes and also glandular trichomes with uni to tricellular stalk and uni to bicellular head; cortex composed of outer collenchymatous tissue and inner 6-8 layers of parenchymatous tissue; collenchyma well developed in basal region and gradually decreases in middle and apical regions; pericyclicfibres absent in basal region of petiole and present in the form of a discontinuous ring in apical region surrounding central horse shoeshaped vascular bundle; a few smaller vascular bundles present ventrally between arms of central vascular bundle and two, or rarely three, bundles situated outside the arms.

Lamina - shows single layered epidermis having mostly unicellular hairs, bi and multicellular and glandular trichomes being rare; hypodermis 1-3 layered interrupted at places by 4-8 palisade layers containing chlorophyll; a large number of veins enclosed by bundle sheath traverse mesophyll; stomata present only on the ventral surface, covered densely with trichomes; vein-islet and vein termination number of leaf are 23-25 and 5-7 respectively.

Powder – It shows number of piece. or whole, uni, bi and multicellular covering trichomes, glandular trichomes, palisade tissues with hypodermis, and upper and lower epidermis, xylem vessels with pitted walls.

Formulations (Yog):

1. Arkadikvathchurna
2. Manikya rasa
3. Vatavidhvamsana rasa
4. Mahavishgarbhatiala
5. Vishagarbhtaila(1).

Home remedies: 1. In cold, its decoction 20 ml should be used along with 1gm Pippali and 250 mg Vacha.
Home remedies:

1. In cold, its decoction 20 ml should be used along with 1gm Pippali and 250 mg Vacha.
2. In pneumonitis, Swarasa of its leaves 10 ml is so beneficial along with Pippali.
3. It's paste on affected site is painkiller and anti-inflammatory.

Medicinal importance

Rather than simply healing a disease, herbal medicine attempts to restore the body to its original state of health. Medicinal plant phytochemical components often work separately, additively, or synergistically to promote health.After examining the many chemical components found in various portions of VitexnegundoLinn., it is critical that attention be turned to the plant's medical potential. Vitexnegundo Linn. contains a wide range of therapeutic characteristics, and the plant is widely employed in the treatment of a variety of illnesses.These properties have been categorized under three heads – traditional medicine, folk medicine and pharmacological evidence.

Leaves: The leaves of Vitexnegundo Linn. are antibacterial, antitumor, astringent, febrifuge, sedative, tonic and vermifuge. They are useful in dispersing swellings of the joints from acute rheumatism and of the testes from suppressed gonorrhea. The juice of the leaves is used for removing foetid discharges and worms from ulcers, whilst oil prepared with the leaf juice is applied to sinuses and scrofulous sores. Extracts of the leaves have shown bactericidal and antitumor activity. Leaves are antiparasitical, alterative, aromatic, vermifuge, pain reliever. Leaves are insect repellents. Extracts of the leaves have insecticidal activity. The fresh leaves are burnt with grass as a fumigant against mosquitoes. Decoction of leaves may improve eyesight.

Dosage: Nirgundi Juice - 20 to 30 ml per day. Nirgundi leaf Powder - 3 to 6 grams per day. Stem: A decoction of the stems of Vitexnegundo Linn. is used in the treatment of burns and scalds. Fruit: The dried fruit of Vitexnegundo Linn. isvermifuge. The fruit is also used in the treatment of angina, colds, coughs, rheumatic difficulties etc. The fresh berries are pounded to a pulp and used in the form of a tincture for the relief of paralysis, pains in the limbs, weakness etc. Fruit-nervine, cephalic, emengogue, dried fruit-vermifuge employing an aqueous extract from the fruit, a 1979 study reported good

esults on premenstrual water retention. Women were able to sustain a good level of milk production for breast feeding while taking this herb. While ittook some time for the drug to take effect, the women were able to continue the use of the drug for months without harmful side effects 21.

Root: The root of Vitexnegundo Linn. is expectorant, febrifuge and tonic. It is used in the treatment of colds and rheumatic ailments. It is harvested in late summer and autumn and dried for later use. Roots are tonic, febrifuge, expectorant, diuretic. Root juice is said to increases the growth of hair.

Seed: Seeds of Vitexnegundo Linn. occasionally used as a condiment, it has pepper substitute. When washed to remove the bitterness it can be ground into a powder and used as a flour, though it is very much a famine food used only when all else fails .

1. ***Traditional medicine:*** Traditional medicine mainly comprises of Indian Ayurveda, Arabic Unani medicine and traditional Chinese medicine. In Asia and Latin America, populations continue to use traditional medicine as a result of historical circumstances and cultural beliefs. Traditional medicine accounts for around 40% of all health care delivered in China. Up to 80 % of the population in Africa uses traditional medicine to help meet their health care needs.
2. ***Ayurveda:*** The herb is mentioned in the CharakaSamhita, which is unquestionably the most ancient and authoritative treatise on Indian Ayurveda. In the exposition on the CharakaSamhita, Vitexnegundo Linn. has been identified as an anthelmintic and is prescribed as a vermifuge. People sleep on pillows stuffed with Vitexnegundo Linn, which is another Ayurvedic application of Vitexnegundo Linn.leaves to dispel catarrh and headache and smoke the leaves for relief. Crushed leaf poultice is applied to cure headaches, neck gland sores, tubercular neck swellings and sinusitis. The leaves' essential oil is also useful in the treatment of venereal illnesses and other syphilitic skin conditions In catarrhal fever with heaviness of head and impaired hearing, a leaf infusion of Piper nigrum is utilised. A tincture of the root-bark can help with bladder irritation, rheumatism, and dysmenorrhea. Formulations described in Anubhoga Vaidya Bhaga, a compendium of formulations in cosmetology, in outlining the use of Vitexnegundo Linn. leaves along with those of Azadirachtaindica, Eclipta alba, Sphaeranthusindicus and Carumcopticum in a notable rejuvenation treatment known as Kayakalpa.
3. ***Unani medicine:*** Vitexnegundo Linn. is commonly known as Nisinda in Unani medicine. The seeds are administered internally with sugarcane vinegar for removal of swellings. Powdered seeds are used in spermatorrhoea and serve as an aphrodisiac when dispensed along with dry Zingiberofficinale and milk.
4. ***Chinese medicine:*** The Chinese Pharmacopoeia prescribes the fruit of Vitexnegundo Linn. in the treatment of reddened, painful and puffy eyes, headache and arthritic joints.
5. ***Uses in western herbal medicine:*** Modern medical world with Vitex began with the introduction of concentrate extracts of Vitex fruits in the 1950. From 1943 to 1997, approximately 32 clinical trial were conducted on a propriety Vitexagnus berry product for evaluating its effectiveness in treating mastitis and fibrocystic diseases, menopausal symptoms, poor-lactation, uterine bleeding disorder and menstrual irregularities. In homoeopathic medicine, Vitexagnus and Vitexnegundo Linn. is used for various sexual debilitiesmarked depression of vital power, premature old age with apathy, self contempt for the sexual abuse nervous debility in unmarried person feeble erection without sexual desire, emission of prolactic fluid when straining at stool, cold, hard, swollen, painful testicle. In general practice, the drug is prescribes to female for leukemia staining yellow suppressed menses, slangy or suppressed breast milk, inflammation of uterus. The flowers are astringents and used in fever, diarrhoea and liver complaints. The fruits are prescribed in headache catarrh and watery eyes when dried. It is consider vermifuge. They are much valued medicinally in china. An aqueous extract of the fruits was found to be good analgesic action. In Philipins – the seed are reported to eaten after boiling. The young shoots are used in the basket making. The ash of the plants is source of potassium carbonate or peer ash and is reported to be used as an alkali in drying.
6. ***Folk medicine:*** Folklore systems of medicine continue to serve a large segment of population, especially those in rural and tribal areas, regardless of the advent of modern medicine. The entries regarding the multifarious applications of Vitexnegundo Linn. in folk medicine have been grouped regionally to emphasize the ethanobotanical diversity and ubiquity of the plant; and the details have been laid out in table no.5 and uses of Vitexnegundo Linn. in folk medicine in India given in table no.610,12 .

Pharmacological evidence: Demands of the scientific community have necessitated experimental evidence to further underline the medicinal importance of Vitexnegundo Linn. described above. Taking cue from these traditional and folk systems of medicine, scientific studies have been designed and conducted in order to pharmacologically validate these claims. The decoction of leaves is used for treatment of inflammation, eye-disease, toothache, leucoderma, enlargement of the spleen, ulcers, cancers, catarrhal fever, rheumatoid arthritis, gonorrhea, sinuses, scrofulous sores, bronchitis and as tonics. As vermifuge, lactagogue, antibacterial, antipyretic, antihistaminic, analgesic, insecticidal, ovicidal, growth inhibition and morphogenetic agents. antigenotoxic, antihistamine, CNS depressant activity and anti-fertility effects were reported from the leaves of Vitexnegundo Linn.

Table 1 Data showing synonyms of Vitexnegundo Linn. in different languages

Sanskrit	Indrani,Nilanirgundi,Nilapushpa,Nirgundi,Nirgundika, Renuka,Sephalika,Shephali, Shvetasurasa, Sindhooka, Sindhuvaram.
Hindi	Mewri, Nengar, Ningori, Nirgandi, Nirgunda, Nisinda, Panikisambhalu,Sambhal,Sambhalu,Nirgundi, Shimalu.
Urdu	Sambhalu, Tukhmsambhalu
Bengali	Nisinda, Sinduari, Beguna, Nishinda, Nishinde.
Kannada	Bile-nekki, Bilenekki, Karilakki, Lakkagida, Lakki, Lakki-gida, Lakkili.
Malyalam	Bem-nosi, Indrani, Karunocci, Noch-chi, Nochi, Vella-noch-chi.