A Review on Therapeutic Application of Ethanobotanical Plant- Vitex Negundo Linn

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Abstract—**Thewoody, fragrantshrubthatisa member of the Verbenaceae family. With rootsin ethnobotany, the study emphasizes how plant-based treatments continue to be a major supply of raw materials for a variety of human ailments. India and Asia areamongthe tropical to temperate locations where vitex negundo is widely distributed. The article details the plant's various traditional use in major medical systems, such as Traditional Chinese Medicine, Arabic Unani, and Indian Ayurveda. Different sectionsoftheplantareusedmorphologically: hypofunctions as a tonic, febrifuge, and expectorant; the fruit is used as a vermifuge; and the leaves are used as a febrifuge, vermifuge, and to reduce joint swelling.**

The plant's bioactive substances, including flavonoids, iridoids, terpenoids, and phenolics, are linked to its medicinal qualities by pharmacological data. A variety of biological actions, including substantial anti-inflammatory effects akin to those of ibuprofen, as well as antinociceptive, CNS depressant, antifungal, and high antioxidant activity, have been validated by laboratory investigations. Vitex negundo is positioned as a prominent medicinal plant with substantial potential for the creation of new therapeutic medicines by this dual-faceted evidence, which comes from pharmacological validation.

Ethnobotany: -Herbal Remedies The study of indigenous plant applications and the interaction between humans and plants is known as ethnobotany, according to Morgenstern [1]. Herbal remedies are widely used in the folk medicine of nearly every society on Earth. Plants are the source of the majority of traditional. Used in healthcare [2]. Despite numerous developments in the fields of antibiotics and synthetic drug chemistry, plants remain a significant source of raw materials for medications that cure a range of human illnesses. By clarifying the function of the active ingredients found in medicinal plants and describing their mode of action in both human and animal systems, clinical pharmaceutical's Vishwanath et;al 2010 (1).

VitexnigundoLinn: -Thewoody, fragrant shrub Vitex negundo Linn. (Verbenaceae) can grow to a small tree. It often has quadrangular branches with trifoliate or pentafoliate leaves that produce bluish-purple flowers in branched tomentose cymes. It grows well by waterways in wasteland or in humid areas.

Commonnameandbiologicalsource: Botanical name: chaste tree Local name: NirgundoSindhvar' Family: Verbenaceae

Common name: ChinesechastetreeOthername: Nirgundi, Chinesechastetree,five–leaveschastetree Hindi name: Nirgunda, Nisinda,Sambhal. Sanskritname:Nirgundika,Renuka,sephalika, Marathi name: Nirgunda,Nirgur,Nirgundi.

Biological source: Nirgundi,orVitexnegundo,isamemberoftheVerbenaceaefamily.Itisa well-known plant due to its two primary characteristics:Arora Vimal 2011(1).

Geographical source: Cultivationcanreachaheightof20feet.Nirgundigrowsgregariously in wastelands and is commonlyutilized as ahedgeplant. It maybefoundin tropical to temperate regions up to 2200 meters from east to west. This plant is grown in America, Europe, Asia, and the West Indies and is found in Indo-Malesia. In India, it can be found all around the country, reaching as high as 1500 meters in the outer Himalayas5. In open-waste lands,

it is prevalent.
Morphology:Inpentafoliateleavesthe inner three leaflets have petiolule while the remaining two aresub-sessile; thetextureis leathery; theodoris agreeablyaromatic; themiddleleaflet is 5- 10 cm long and 1.6-3.2 cm broad, with a 1-1.3 cm long petiolule and the remaining two are sub- sessile.

Leaves: Astringent, febrifuge, sedative, tonic, vermifuge, antibacterial, and anticancer. Theyarehelpfulinreducingtesticularedemafromsuppressedgonorrheaand jointswellingfromacute rheumatism. Whileoil made from the leafjuice is used to sinuses and scrofulous lesions, theleaf juice itself is utilized to remove worms and foetid discharges from ulcers.

Fig. no.1 Vitex Nigundo

Fruit: Vitex negundo Linn. Produces vermifuge dried fruit. The fruit retains water before menstruation. When using this herb, women were able to maintain healthy amount of milk supply for breastfeeding. In contrast, it causes rheumatism, bldder irritation, and dysmenorrhea

Fig. No.2 vitex Nigundo Fruit

Seed: Vitex negundo Linn. Seeds. It contains a pepper equivalent and is sometimes used as a condiment. Although it is essentially a famine meal that is used only in extreme cases, it may be pounded.

Fig. No.3 V. Nigundo Seed

Medicinal Important; restore the body to its natural state of health rather than only treating a specific illness [28]. Medicinal plants' phytochemical constituents frequently enhance health either singly, in combination, or in concert Following an analysis of the different chemical components found in various areas of, Vitexnigundo attention must turn. These characteristics have been divided into three categories: pharmacological evidence, folk medicine, and traditional medicine. A.S Vishwanathan et.al,2010(3). restore the body to its natural state of health rather than only treating a specific illness [28]. Medicinal plants' phytochemical constituents frequently enhance health either singly, in combination, or in concert Following an analysis of the different chemical components found in various areas of Vitexnigundo, attention must turn. These characteristics have been divided into three categories: pharmacological evidence, folk medicine, and traditional medicine. A.S Vishwanathan et.al,2010(3)

Traditional medicine:Extra medication Indian Ayurveda, Arabic Unani medicine, and traditional Chinese medicine make up the majority of traditional medicine. Due to historical events and cultural beliefs, people in Asia and Latin America still employ traditional medicine. In China, around 40% of all medical care is provided through traditional medicine Ayurveda: The Charaka Samhita, unquestionably the oldest and most important treatise on Indian Ayurveda, has references to plants. In Sharma's exposition on the CharakaSamhita, Vitexnigundo is prescribed as a vermifuge (verse Vi:7-21) and classified as an anthelminthic (verse Su:4-15) [31]. Tirtha describes more uses of Vitex nigundo in

Ayurveda [32]. People smoke the leaves for relief and sleep on pillows filled with Vitex nigundoleaves to help with headaches and diarrhea. Unani medicine: Unani medicine the uses of Vitexnigundosometimes called Nisinda, in Unani medicine are described by Khare [19]. To reduce edema, theVitexnigundoseeds are used internally with sugarcanemedicineThe uses of Vn, sometimes called Nisinda, in Unani medicine are described by Khare [19]. To reduce edema, the seeds are used internally with sugarcane vinegar. Chinese medicine: describes how, Vitex nigundo also called Nisinda, is used in Unani medicine. To reduce edema, sugarcane vinegar is taken internally along with the seeds. Powdered seeds are used to treat spermatorrhea and, when taken with milk and dry Zingiberofficinale, act as an aphrodisiac.

Biological source: Numerous chemicals that have developed as defense mechanisms against microorganisms and herbivores are known to be produced by plants [11]. The description of vitex nigundo therapeutic qualities and biochemically active components raises questions about how the plant extracts affect other living things. Vitex nigundohas demonstrated promise as a successful biocontrol agent. demonstrated promise as a successful biocontrol agent. Vitex nirgundoextracts have the ability to suppress, dissuade, or kill biological agents that harm and injure other living things.

Therapeutic used of Vitex nigundo: Anti-inflammatory:Vitex negundo Linn. Has anti-inflammatory properties similar to phenlbutazone and ibuprofen, suggesting that it could be used as an adjuvant therapy in addition to conventional anti-inflammatory medications. Prostaglandin synthesis inhibition is the mechanism by which Yunos et al. and Jana et al. demonstrated the anti-inflammatory.Antinociceptive activity:The antinociceptive effect of ethanolic leaf extract of Vitexnegundo Linn. (100, 250, and 500 mg/kg, p.o.) was investigated using the tail flick test in rats and acetic acid-induced writhing in mice. Meperidine (40 mg/kg,) in the tail flick method and aspirin. CNS depressant activity: It was discovered that a methanolic extract of Vitex Negundo Linn. Leaves considerably increased the amount of time that mice slept after being given pentobarbitone sodium, diazepam, and chlorpromazine8.

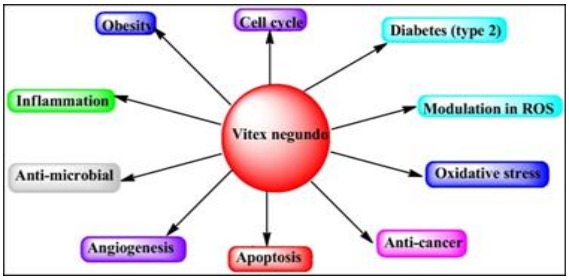

Fig no 4 vitex negundo

Antifungal activity: The antibacterial properties of each isolated chemical were assessed. Trichophyton mentagrophytes and Cryptococcus of need of diphenylhydantoin and valporic acid3,31 was found to be significantly inhibited by the novel flavone glycosideand compound. Antioxidant activity: Vitex negundo Linn. Was examined in all of its fractions. It demonstrated a direct function in trapping free radicals by demonstrating a strong scavenging activity for (2, 2′-azino-bis 3-ethyl benzothiazoline-6-sulfuric acid) ABTS radical cations in a concentration-dependent manner.

Anticonvulsant activity: The anticonvulsant properties of Vitex negundo Linn. Leaf extract was investigated using albino rat seizures (MES) and albino mouse seizures generated by pentylenetetarazole (PTZ). 50% protection against clonic seizures and 24-hour mortality against PTZ-induced seizures were demonstrated by the test medication do(1000mg/kg,p.o.). Additionally, it greatly reduced. Antiallergic Activity:Vitex negundo Linn. Ethanolic extract exhibited antiallergic action against mast cell degranulation brought on by immunological stimulation. Additionally, it prevented edema in mice experiencing active paw anaphylaxis. Both the early and later sustained periods of tracheal contractions were markedly reduced by the extract

Hepatoprotective activity: Serum bilirubin, aspartate aminotransferase (AST), alanine aminotransferase (ALT), alkaline phosphates (ALP), and total protein (TP) levels are significantly reduced at 250 and 500 mg/kg doses of Vitex negundo Linn. Against hepatotoxicity (HT) caused by the administration of a combination of three antitubercular medications: isoniazide (7.5 mg/kg), rifampin (10 mg/kg), and pyrazinamide (35 mg/kg). A hepatoprotective effect against liver damage caused by carbon tetrachloride was demonstrated by an alcoholic extract of Vitex negundo Linn. Seeds.

Use sofvitexnigundoin diseases

Usedin	Plantpartused	Country	References
Gastrointestinal disorders Diarrhoea	Flowers	India,Pakistan	Shaukatet. Al.,2009 Warrieret.Al., 2002
Headache	Crushedleaf poultice		Khanet.al.,2006 Avadhoot et.al.,1991 Ong.,2008
Commoncold,Flu, Sore Throat	Leafjuice	China	Au et.al.,2008
Asthma	Root decoction	India	Basavaraju et.al.,2009
Respiratory disorders Cough	Used as expectorant Rootdecoction Leaf juice	China, India	Au et. al., 2008 Muthuet.al.,2006 Rajadurai et. al., 2009
Cancer	Stem bearing flowersleaves	Philispines India	Grahamet.al.,2000 Basavaraju et. al., 2009

ApplicationsofVitexnigundo:

- AntimicrobialNaturalDayexcretionusesinVitexnigundo: WhenVenkataramanappa Narayana Swamy et al. [104] used vitex nigundo they found that the leaf extracts of the plant may be used to dye silk garments and could be a potential substitute for synthetic dyes. The leaves'three main flavonoids luteolin-7-glucoside, casticin, and artemetin made them a viable option for silk fabric dye. In addition.
- Removal of Fluoride from Polluted Waters Using Vitex nigundo: Human health is impacted by fluoride in drinking water in both positive and negative ways. MekalaSuneetha et al.'s study [105] shown that activated carbon treated with nitric acid from vitex negundo (NVNC) plant bark can be utilized as a successful adsorbent for groundwater defluoridation. The adsorption process was adsorption fitted isotherm with Langmuir correlation coefficient value, which showed monolayer adsorption and a good correlation coefficient value. The pseudo-second-order kinetics were followed by the adsorption kinetics.
- Herbal Soap Formulation Using Leaf Extraction Vitex nigundo: herbal soap was created by Kandasamy Ruckmani et al. [106] using a methanolic extract of vitexnirgundo plants. The extract underwent chemical characterizations and saponification followingfirstphytochemicalinvestigation. AccordingtotheresultsApplications of Vitex nigundo: theestimatevalues, theestimatevalues

Commonname:NirgundiFamily: Verbenaceae

1. Medicinalapplications:

Anti-inflammatory&analgesic: -UsesinMedicineAnalgesicandanti-inflammatory: usedto alleviate inflammation in the muscles, joints, and arthritis. External use of leaf paste or decoction is common.

Antimicrobial: -Antimicrobialhasantifungalandantibacterialproperties; itcanbeusedto heal wounds and skin infections.

RespiratoryConditions: -Becauseofitsexpectorantqualities,aleafdecoctionisused to treat bronchitis, asthma, and cough.

Antipyretic: -Whenconsumedasa decoction.

ReproductiveHealth: -utilizedinconventionalmedicinetocontrolAskanything you want.

Antioxidant: Becauseflavonoidsandphenolicchemicalsarepresent, theyshieldcellsfrom oxidative.

UsesinAgriculture: -usedasaninsectrepellantandbiopesticide(particularlyagainstcrop pests and mosquitoes).

Aromaticandcosmeticapplication: -LTE+79.Becauseofitscalmingscentandanalgesic qualities, leaf oil is utilized in herbal remedies and massage oils.

ApplicationinVeterinary: -MedicineAnimalwounds,inflammation,andskinconditions are treated.

TherapeuticusedofVitexnigundo:

ACTIVITY	ACTIONACAINST	REFERENCES
Anti-bacterial	Escherichia coli, Klebsiella aerogenes, Proteusvulgaris,andPseudomonasaerogenes (Bacteria)	[102]
Anti-feedant	Spodopteralitura(Asianarmy-worm) Achoeajanata (Castor semi-loop	[17,103]
Anti-filarial	Brugiamalayi(Microfilarialparasite)	[104,105]
Anti-fungal	Alternaria alternata, Curvularialunata Trichophyton mentagrophytes, Cryptococcus neoformansAspergillusniger,Candidaalbicans [106-108]	[106-108]
Anti-larval	Cnaphalocrocismedinalis(Rice leaf-folder) [109]	[109]
Anti-viral	Plasmodiumfalciparum(Virus)	[110]
Mosquito repellant	Culextritaeniorhynchus(Mosquito)	[123]

CONCLUSION

Traditional and Botanical: Traditional and Botanical Context Vitex negundo (Vn) is a fragrant, woody shrub that is a member of the Verbenaceae family. It is found in many tropical and temperate locations, such as Asia and India. Major medical systems including Arabic Unani, Indian Ayurveda, and Traditional Chinese Medicine.

Numerous bioactive compounds, including terpenoids, phenolics, iridoids, and flavonoids,areassociated with therapeuticqualities. Numerous biological activities havebeen confirmed by laboratory studies, establishing it as a well-known medicinal plant: anti-inflammatory properties (similar to those of ibuprofen). Action that reduces pain.

Root: Used as an expectorant, febrifuge (fever reliever), and tonic. Leaves: Used as apoulticeforheadaches, afebrifuge,avermifuge(whichdrivesoutworms),andtol essenjoint swelling caused by severe rheumatismandfruit,flowers,seed.

Dyeing: Leaf extracts have the potential to replace synthetic colors in silk textiles. Water Purification: Activated carbon made from the bark can be used to remove fluoride from contaminated water. Cosmetics: Because of its analgesic and soothing aroma, leaf oil is utilized in massage oils.Agriculture: Used as a biopesticide and insect repellent

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