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A COMPREHENSIVE EXPLORATION OF NIRGUNDI

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ABSTRACT

A deciduous shrub *Vitex negundo (sindhuvar)* also known as *Nirgundi* in Sanskrit and Hindi it has natural habitat in many regions of the world. it is also believe that India and the Philippines to be its places of origin. *Nirgundi* is not mentioned in the *Vedas*, but it is mentioned multiple times for the treatment of many ailments in post-*Vedic* literature. The plant is used for a wide variety in India, including basketry, dyeing, fuel, food, protecting stored grains, pesticides, growth promoters, manure, and treating human, cattle, and poultry. It is utilized in Ayurveda, Unani, Siddha, Homoeopathy, and Allopathy. Historically In India, traditional medicines were utilized with extensive understanding of the therapeutic value of many different plants. One of the most useful herbs in Indian System of Medicine is *Vitex negundo* Linn, it has been in use for a very long time period. For the treatment of particular ailments, the entire plant, including the leaves, leaf oil, roots, fruits, and seeds, is used. But in Ayurveda, the most crucial components are the leaves, roots, and bark. This paper is also provides pharmacological proof of its use in Ayurveda and folk medicine, as well as its traditional agricultural uses as a storage, field, and household pesticide.

KEYWORDS: *Vitex negundo*, *Nirgundi*, Ayurveda, *Sindhuvaaraka*, Therapeutic utility.

INTRODUCTION

Nirgundi is a Sanskrit word, which means it protects the body from infections. Which is a member of the *Verbenaceae* family and goes by the botanical name *Vitex negundo*.[1] This herb is mentioned in every *Ayurvedic Samhita. Bhavapraksh* has described two varieties of *Nirgundi*. One is *Sindhuvaaraka* and the second is *Suvahaa.*[2] *Nirgundi* is one of the plants mentioned in Ayurveda that has significant medical value. According to World Health Organisation research, traditional medicine serves the primary healthcare needs of more than 80% of the world's population.[3] The word *Vitex* is derived from the Latin vieo' (meaning to tie or bind) due of the flexible nature of its stems and twigs. About 18 of the 270 species in the genus that are known are grown in gardens and are known as "chaste trees" or simply *Vitex*. The genus was established by Linnaeus in 1753 with four species: *Vitex agnus-castus*, *V. negundo, V. pinnata*, and *V. trifolia* in the family *Verbenaceae.*[4]

Aromatic shrub *Vitex negundo* Linn. Has the potential to develop into a small tree. It is woody and does well in humid environments or near water in wasteland. It has also been discovered to thrive in mixed open forests. The quadrangular branches of the plant often have tri- or penta-foliate leaves, which are followed by bluish-purple flowers in branched tomentose cymes. In certain regions of Asia, Europe, North America, and the West Indies, the plant is grown as a crop on a commercial basis. India is home to the plant, which is widely grown as a hedge plant. The plant produces ovoid or obovoid, four-sided drupes that turn black when ripe.[5] The usage of herbal remedies, which have the added advantage of being beneficial against a wide range of diseases and disorders and of having no known negative side effects, is becoming more and more popular worldwide. This makes researching and using the medicinal properties of herbs to treat ailments. It is vital to investigate the ancient indigenous knowledge of Ayurveda in the area of health in order to meet this need of the suffering mankind.[6]

HISTORY

A literal translation of the Sanskrit name for *V. negundo-nirgundi* is "that which protects the body from diseases." One of the herbs mentioned in every *Ayurvedic Samhita* is this one. Ancient Indians distinguished between two types of *nirgundi:* one with white flowers *(shwetapushpi)*, known as *sindhuvar*, and the other with blue flowers (*pushpanilika*), known

as *nirgundi* in Sanskrit.[7] It was known as *nirgundi*, *sephali (ka)*, and *sinduvara* in the agricultural book *Surapala's Vrikshayurveda*.[8]

ETHMOLOGY

"Nishkasya Vyaadhinam Gundayathi Sareeram Rakshatiti"

Nirgundi cures many diseases and protects the body.[9]

TAXONOMIC CLASSIFICATION[10]

Kingdom	-	Plantae
Subkingdom	-	Tracheobionta
Super Division	-	Spermatophyta
Division	-	Magnoliophyta
Class	-	Magnoliopsida
Sub Class	-	Asteridae
Order	-	Lamiales
Family	-	Verbenaceae
Genus	-	Vitex
Species	-	Negundo

GEOGRAPHICAL SOURCE

Natural growth of *Vitex agnus-castus* occurs from the eastern Mediterranean to central Asia. The five to seven radiating leaflets that make up the leaves. The five-leaved chaste tree, *Vitex negundo,* is more resistant to cold temperatures than the *Agnus* species. *Vitex* may be found in Africa in Kenya, Tanzania, Mozambique, and Madagascar, as well as Asia in Afghanistan, Bangladesh, Bhutan, Cambodia, China, India, Indonesia, Malaysia, Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Thailand, Taiwan, and Vietnam. It can also be found in areas with a similar ecosystem along with the coasts of Mauritius, Japan, Malaya, tropical Australia, and Polynesia.[11] All of India, Ceylon, Afghanistan, tropical Africa, Madagascar, China, and the Philippines are home to the plant.[12] The plant is also found in Burma, Southern India, and Bengal.[13] It is widespread in squatter areas near villages, along riverbanks, in damp areas, and in deciduous forests.[14]

GEOGRAPHICAL DISTRIBUTION

Vitex usually reaches heights of three to nine feet, but with cultivation, it can grow to twenty feet. In wastelands, *nirgundi* grows profusely and is widely used as a hedge plant. It can be

found in regions ranging from tropical to moderate (up to 2200 meters from east to west). This plant is found in Indo-Malaysia and is commonly cultivated there as well as in America, Europe, Asia, and the West Indies.

It is widespread over most of India and reaches a height of 1500 meters in the outer Himalayas. In locations with open waste, it is common. Locally common along riverbanks throughout the entire state of Maharashtra; especially common close to the water in Konkan tidal and beach forests; along Deccan rivers. In wetlands and wastelands, habitat has been found.[15],[16],[17]

MORPHOLOGY

Large shrub or occasionally a small, narrow tree with thin, grey bark and quadrangular, whitish branch lets with delicate tomentum. The terminal leaflet is 5-10 by 1.6-3.2 cm and has a petiole that is 1-1.3 cm long. The lateral leaflets are smaller and have extremely short petioles. The leaves are 3-5 foliate; the leaflets are lancoelate; the bases are sharp; and the common petioles are 2.5-3.8 cm long.[18]

Bracts are 1.5-2.5 mm long, lancoelate caduceus, and are arranged in pedunculate branched tomentose cymes opposed along the quadrangular tomentose rachis of a huge terminal, frequently compound pyramidal panicle. Teeth are triangular and 0.8- 1 mm long on a 3 mm long, white tomentose calyx. Ovary, style, and stigma are all glaborous. Smaller than 6 mm in diameter, and when mature, black.[19]

CULTIVATION

Cattle typically avoid grazing it since it is frequently planted as a hedge plant between the fields. It is easily cloned from shoot cuttings. An easily cultivated plant, it grows in poor, dry soils but prefers a light, well-drained loamy soil in a warm, sunny location protected from cold drying winds. Plants may survive in temperatures as low as -10°C. Strong smells come from the stems and leaves. The blossoms have a very strong musk-like scent.[20]

AYURVEDIC PROPERTIES[21]

Rasa - *Katu (pungent), Tikta (bitter)*

Guna - *Laghu (light), Ruksha (dry)*

Virya - *Ushna (hot)*

Vipaka - *Katu (pungent)*

Doshakarma - Kapha-Vata Shamaka.

VARIED USES OF VITEX NEGUNDO

There are many uses for *vitex negundo*. It is used as a hedge, attractive plant, agricultural growth promoter, manure, pesticide, medicine, food, food protectant, domestic pesticide, in the reclamation of waste land and erosion, basketry, water divination, and in the construction of grain storage facilities. Although it is revered and used in a number of rites, its medical benefits outweigh all other usage.[22] Young shoots are utilized in basketry, stems are used as firewood, and plant ash is used as an alkali in dyeing. Its branches are utilized for wattle work, and its wood is used for building and as fuel. Before making metallic powders into tablets, the leaf juice is used to soak them. Using herbal shoes made from *nirgundi* wood to treat rheumatism is common in some areas of Chhattisgarh.[23]

For the purpose of retaining soil and preserving moisture, it is utilized as a contour hedge in sandy desert environments. The shrub can be utilized for forestation, particularly for reclaiming flood-affected forestlands. It has been determined to be suitable for windbreaks and shelterbelts. *V. negundo* species that are utilized as attractive plants. Its inflorescence is sometimes used as ornamentation.[24] Flowers of *sindhuvara* (sweta nirgundi white form) are used as vegetables having the property of cooling *(sita)* and the power of destroying bile *(pittanasana)*.[25]

Household pesticide

Dry *Vitex negundo* leaves are typically preserved with woolen clothing because they stave against worms and insects that eat wool. During the rainy season, leaves are burned in a fire to keep mosquitoes away from people and animals; the smoke deters insects. Bedbugs are repelled by dry leaf powder and Mosquitoes can be repelled by dry leaves powder on its own or combined with dhoop smoke.[26]

AGRICULTURAL USES

Ayurvedic determinants of a pesticide

Nirgundi is pungent, bitter, and astringent in taste, pungent in the post-digestive effect and has hot potency. It alleviates *vata* and *kapha doshas*, but aggravates the *pitta dosha*. It possesses light and dry attributes. A plant product, to be effective as an insecticide, must possess some specific Ayurvedic properties. It has been known that the plants with pungent *(katu)*, bitter *(teekta)*, astringent *(kasaya)* taste; *katu* in *vipaka* (transformed taste), *ushna*

(hot) in *veerya;* penetrating *(teeksna)* quality; hot *(ushna)* potency are antagonistic to the *kapha dosha* and possess insecticidal and anti-worm properties *Vitex* is *katu* and *teekta* in taste, *katu* in *vipaka* (transformed taste), *ushna* in *veerya, laghu* and *rooksha* (dry) in *guna*, thus it possesses most of the inherent qualities or decisive features of an insecticidal plant. On basis of these inherent properties [*rooksha* (dry) in *guna*], *Vitex* may be considered to possess antimicrobial activity also.[27]

Growth promoter

Ancient texts mention fumigation, smearing with *unmatta (Datura metel), vatarika (Allium sativum), mallika (Jasminum sambac), sinduvara, tila (sesame), masha (black gramme), yava (Hordeum vulgare),* clarified butter, and honey mixed in milk to promote the growth of newly planted trees.[28] Field bean blossom shedding and early pod fall are now controlled in Tamil Nadu by spraying a mixture of neem cake and *Vitex negundo (nochi)* leaf extract.[29]

Manure

Leaf manure is made from the green leaves of numerous non-nitrogen-fixing plants and *Vitex negundo*. In some areas of Tamil Nadu, manuring is made from the twigs and leaves of *nochi* as well as leaves from *Calotropis gigantea, Cassia auriculata, Gliricidia maculata*, and *Tephrosia purpurea.*[30]

Traditional use in plant disease and pest control

Since post vedic period, *Vitex negundo* has been used to treat plant illnesses and prevent tree wind damage. A mixture of *nigundika, guggul (Commiphora wightii),* and oil cake fumigation at the root, this remedy is said to be effective in treating wind ailments. A frost-damaged tree can develop a lot of sprouts if it is treated with cow dung ash and sprinkled with *nirgundika* decoction.[31]

Medicinal importance

Nirgundi is employed in the Ayurveda, folk, Siddha, Tibetan, and Unani systems of medicine in India. It is intriguing that it is also used in allopathic and homoeopathic medical systems. *Vitex* has been credited with a wide range of medicinal characteristics, and it has also been widely utilized to treat a wide range of illnesses.[32]

Use in Ayurveda

In the field of Ayurvedic medicine, leaves, roots, and barks are the most significant. Leaf oil is also employed in the treatment of a number of ailments. When treating pitta-specific conditions such liver complaints, fever, bleeding diarrhea, and hemorrhage, the blossoms, which differ slightly from the rest of the plant and have a cooling energy, are employed. Diarrhea, cholera, fever, hemorrhages, hepatopathy, and heart problems can all be treated with the flowers.[33]

Sindhuvara has been utilized as medicine in Ayurveda for a very long period. Numerous applications of *nigundi* are found both inside and outside. The herb is mentioned in verses of the *Charaka Samhita,* unquestionably the oldest and most reliable book on Ayurveda. *Vitex* is given as a vermifuge and is classified as an anthelmintic. *vitex* has been utilized in postoperative care because it restores the uterus to its natural size and lessens edoema, It also helps in the early stages of gonorrhea, improves digestion, treats muscle swelling and sciatica, reduces common weakness, reduces cough, fever, and swelling of the lungs and spleen, heals wounds, and helps with eye diseases. It also increases sexual power. Expectorant, carminative, digestive, anodyne, antiseptic, alterant, antipyretic, diuretic and emmenagogue, depurative, rejuvenating, ophthalmic, vulnerary, and tonic characteristics are said to be present in the plant.[34]

The white-flowered form of *Sindhuvara* is used to cure intrinsic hemorrhage, rat and snake poisoning, and fevers. The blue-flowered form of *nigundi* is used to treat a range of ailments, including cough and asthma, guinea worm, *gandmala* (cervical adenitis), sinus, epilepsy, consumption, foetid ear, *vatavyadhi*, and puerperal diseases.[35]

The leaves of *Sindhuvara* are used to treat headaches, brain disorders, mouth ulcers, sore throats, throat swelling, fever, bloating, and stomachaches. To treat catarrh and headaches, people load pillows with *sindhuvara* leaves and smoke the leaves as they sleep. Headaches, neck-gland sores, tubercular neck swellings, and sinusitis are all treated with crushed leaves. After a malaria attack, leaf powder is helpful for healing the liver and gall bladder. For a simple delivery, leaf paste is placed on the vagina, waist, and navel.[36]

When taken its fresh leaves juice *(svarasa)* internally, it cure a range of digestive issues, including dyspepsia and parasites. It also aids in the treatment of *kapha* and *vata* fevers, catarrh, cough, and bronchitis. The leaf juice can be used to treat inflammatory joint illnesses

like arthritis and gout as well as skin conditions like dermatitis and psoriasis. Externally applied, the *svarasa* is used to treat orchitis, wounds, snake and insect bites, ulcers, bruises, sprains, and joint inflammation associated with otitis media. The juice is also applied to skin conditions caused by bacteria and parasites. The juice from the leaves can clean ulcers of worms and foul discharge. In particular, the freshly dried leaves are smoked in the treatment of *kapha* disorders including headache and catarrh. The freshly dried leaves can be prepared into a potent infusion and used in much the same way as the fresh juice.[37]

To treat periodontal disease and alleviate tooth pain, *nirgundi* is applied as a mouthwash. Catarrhal fever with heaviness of the head and impaired hearing is treated with a leaf decoction containing *Piper nigrum*. Leaf oil is used to cure syphilitic skin conditions such sore lips, foetid ears, fever, gandmala (cervical adenitis), and sexual infections.[38]

AYURVEDIC FORMULATIONS[39]

1. Vatagajankusa Rasa
2. Mahavata Vidhvansana Rasa
3. Ykrtptihara Lauha
4. Dasamula Taila
5. Trivikrama Rasa
6. Nirgundi Taila,
7. Visa Tinduka Taila

HOME REMEDIES[40]

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. Application Its paste on affected site act as painkiller and anti-inflammatory.

DISCUSSION

The Sanskrit name of the *Vitex* plant itself describes its therapeutic value. *"Nirgudati shareeram rakshati roghhyah tasmad nirgudi": Nirgudi* is something which guards the body against infections. A common local proverb among the Bhangali people of India's Western Himalayas reads, "A man cannot die of disease in an area where *Vitex negundo, Adhatoda vasica*, and *Acorus calamus* are found [provided that he knows how to use them].[41]

From the root to the fruit, every part of the plant is rich with secondary phytochemical metabolites that give the plant an unheard-of range of therapeutic benefits. It's fascinating to note that a single plant species is used in traditional and folk medicine to cure a variety of illnesses, some of which have even undergone scientific validation. As a result, the *Vitex* plant has a lot of potential as a widely accessible medicinal herb. And it should come as no surprise that the plant is known as *"sarvaroganivarini"*—the cure for all diseases—in old Indian traditions.

Lagundi (nirgundi) is one of a select few herbs that have recently been approved for use as medicine by the Philippines' Bureau of Foods and Drugs (BFAD), since it has been shown to be a potent analgesic and antitrussive (made as a tasty cough syrup). As a result, it has been given consideration as a dextromethorphan substitute in the public health system for treating cough and asthma.[42]

CONCLUSION

Traditional and ethnobotanical uses of natural substances, particularly those of plant origin, have received a lot of interest recently since they have been thoroughly studied for their efficacy and are generally thought to be safer for human usage. One of the most popular herbal plants in the practise of Ayurveda is *nigundi*. Both internally and externally, it has seen widespread application. The benefits of *Nirgundi's* traditional use have also been confirmed by the isolation and identification of many potentially active chemical components, primarily flavonoids, from various portions of the plant, including leaves, twigs, bark, seeds, and roots. Therefore, planting a tree is crucial and necessary for all of us.

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