

NIRGUNDI (VITEX NEGUNDO): A REVIEW ARTICLEMishra Ankur^{1*}, Tiwari R. C.² and Srivastava Kumar Alok³¹MD Scholar Department of Agadtantra,²Professor and HOD Department of Agadtantra.³Professor and HOD Department of Panchkarma.

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ABSTRACT

Traditional medicines were originally used with vast knowledge about the pharmacological activity of numerous plants. Medicinal plants have been widely used to treat a variety of infectious and non-infectious ailments. According to one estimate, 25% of the commonly used medicines contain compounds isolated from plants. *Vitex negundo* (*nirgundi*), is a deciduous shrub naturalized in many parts of the world. Some consider it to have originated in India and the Philippines. There is no reference to nirgundi in the Vedas, while several references occur in post-Vedic works. In India, *Vitex negundo* (*Nirgundi*) is one of the very useful plant in Indian System of Medicine. The genus *Vitex* contains 270 species distributed around the world. The present review aims to compile information on its, medicinal values it is an interesting source of potential bioactive molecules, as iridoids compounds, flavonoids, diterpenoids derivatives, phytosteroids, with antioxidant, anti-inflammatory, antimicrobial, Hepatoprotective activity, analgesic and antihistamine.

KEYWORDS: irrioids, flavonoids, phytosteroids, antioxidant, analgesics.**INTRODUCTION****GEOGRAPHICAL DISTRIBUTION**

It is an erect, 2–5 m in height, slender tree with quadrangular branchlets. The leaves have five leaflets in a palmately arrangement, which are lanceolate, 4– 10 cm long, hairy beneath and pointed at both ends. The bluish purple flowers are numerous. The fruit is succulent, black when ripe, rounded and about 4 mm in diameter.^[1]

It is found in moist area, often on banks of rivers, throughout India, up to an altitude of 1500 meter, also grown in Mediterranean countries and Central Asia.

It is widely used in folk medicine particularly in South and Southeast Asia. Herbal remedies are a type of alternative medicine that originates from plants and plant extracts. Used to heal illnesses and disease and to address psychological concerns, herbal remedies have been around for centuries and were the precursor to modern medicine. Herbal remedies are obtained from a wide variety of natural resources including plant leaves, bark, berries, flowers and roots.

TAXONOMIC / SCIENTIFIC CLASSIFICATION

Kingdom: Plantae

Sub Kingdom: Tracheobionta

Super Division: Spermatophyta

Division: Magnoliophyta

Class: Magnoliopsida

Sub Class: Asteridea

Order: Lamiales

Family: Lamiaceae

Genus: *Vitex* linnSpecies: *Vitex negundo* Linn. (Chaste tree)**DIFFERENT NAMES**❖ Botanical Name: *Vitex negundo*

❖ Sanskrit: Nirgundi, Sindhuvara, Neelamanjari, Indrasurasa, Bhoothakeshi, Neelika

❖ Hindi: Samhalu, Saubhalu, Nirgandi

❖ English: Five-leaved chaste tree

❖ Bengali: Nirgundi, Nishinda

❖ Gujarati: Nagod

❖ Kannada: Bile-nekki

❖ Malayalam: Indrani

❖ Telugu: Nallavalli, Vavilli, Tellavavilli

❖ Tamil: Nirkunuchi, Nallanochi

PARTS USED: root, leaves, flowers, fruits, bark.

PROPERTIES Various medicinal properties are attributed to it particularly in the treatment of inflammatory, anti-microbial action, fungal diseases, antioxidant and hepatoprotective disorders. *Vitex negundo* is the richest source of stable Vitamin C. This

richness in Vitamin C makes the Nirgundi one of the best anti-inflammatory and anti-biotic. Nirgundi is a drug of choice for problems where inflammation has occurred like- pharyngitis, tonsillitis, endometriosis and even orchitis. The recommended dose is 3-6 gm for roots, seeds and leaves powder. The plant products of *V. negundo* are variously reported to possess insecticidal activity against stored product pests, mosquito larvae, house flies and tobacco leaf eating larvae. Leaf oil of the plant is shown to have repellent action against stored product pests. Nirgundi cures indigestion, brings down temperature, and is particularly recommended in typhoid. To control lice, leaves of nagod (*V. negundo*) are heaped in the poultry farm. It is believed that the smell of the nagod leaves repels lice. Leaves also cures sprain, headache, abdominal gas and pain, fever, toothache, asthma, cough, ulcers, boils and wounds.

PHARMACOLOGICAL EVIDENCE BASED ANTIINFLAMMATORY ACTIVITY

Dermatitis means an inflammation of the skin, an arthritis an inflammation of joints, an othitis an inflammation of the ear. Thus anti-inflammatory activity of a compound is considered to be a valuable feature. The leaves of *Vitex negundo* possess anti-inflammatory activity. Experimental investigations revealed that the mature fresh leaf of *Vitex negundo* have dose-dependent activity against inflammation as revealed in the carrageenan and formaldehyde models. Mature fresh leaf extract of *Vitex negundo* also demonstrated a dose-dependent prostaglandin (PG) synthesis inhibition, membrane stabilising and antihistamine activities. The inverse dose-response relationship shown by acute anti-inflammatory, antihistamine, PG synthesis inhibition and membrane stabilising activities may be due to reduction of the effectiveness of the active principle at its high concentrations.^[2]

ANTI-MICROBIAL ACTIVITY

Antimicrobial activity of ethanol extract of *Vitex negundo* Linn. leaves was carried out by adopting well diffusion method upon pure culture of *Escherichia coli*, *Staphylococcus aureus* and *Klebsiella pneumoniae* bacteria. In this study the concentration of 20 mg/ml, 40 mg/ml, 60 mg/ml, 80 mg/ml, 100 mg/ml of leaf extract was used. The result showed the antimicrobial activities against all the above bacterial pathogens studied. The maximum zone of inhibition observed for *S. aureus* was 15 mm at the concentration of 80 mg/ml and 100 mg/ml and for *E. coli* and *K. pneumoniae* maximum ZOI noted was 12 mm and 11 mm at 100 mg/ml concentration respectively. The results suggested that the leaf extract of *Vitex negundo* Linn. indeed possessed significant antimicrobial activity against all the bacteria tested but the effect was greater towards *S. aureus*.^[3]

HEPATOPROTECTIVE ACTIVITY

Negundoside and Agundoside from *Vitex negundo* have been studied for their hepatoprotective activity. Extract

of *Vitex negundo* is reported to decrease Serum Bilirubin, Aspartate, Aminotransferase, Alanine Aminotransferase, Alkaline Phosphates and Total Protein (TP) levels in case of liver damage. Leaf extracts of *Vitex negundo* were found to possess hepatoprotective activity against liver damage induced by d-galactosamine^[4], (1987), commonly used tubercular drugs and carbon tetrachloride.^[5]

ANTI-FUNGAL ACTIVITY

Bioactivity guided fractionation of ethanolic extract of leaves of *Vitex negundo* Linn. resulted in the isolation of new flavone glycoside along with five known compounds. All the isolated compounds were evaluated for their antimicrobial activities. The new flavone glycoside and compound 5 were found to have significant antifungal activity against *Trichophyton mentagrophytes* and *Cryptococcus neoformans* at MIC 6.25 µg/ml.^[6]

CNS DEPRESSANT ACTIVITY

A methanolic extract of the leaves of *Vitex negundo* Linn. was found to significantly potentiate the sleeping time induced by pentobarbitone sodium, diazepam and chlorpromazine in mice.^[7]

SNAKE VENOM NEUTRALIZATION ACTIVITY

The methanolic root extracts of *Vitex negundo* Linn. and *Emblca officinalis* showed antisnake venom activity. The plant *Vitex negundo* Linn. extracts significantly antagonized the *Vipera russellii* and *Naja kaouthia* venom induced lethal activity both in *in vitro* and *in vivo* studies. *Vipera russellii* venom-induced haemorrhage, coagulant, defibrinogenating and inflammatory activity were significantly neutralized by both plant extracts. No precipitating bands were observed between the plant extract and snake venom.^[8]

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 uses of *Vitex negundo* Linn. in folk medicine in India given in table.^[9,10]

STATE	USED IN TREATMENT OF
Andhra Pradesh	Asthma, Cancer, Used as bath for women in puerperal state and for new born children
Assam	Jaundice, Urticaria, Cellulitis, Abscesses, Carbuncles, Eczema, Liver disorders
Himachal Pradesh	Kwashiorkor Wounds, Body ache
Karnataka	Toothache, Febrile, catarrhal and rheumatic afflictions, Migraine
Maharashtra	Rheumatism, Encephalitis, Expectorant, Joint pain
Orissa	Jaundice
Tamil Nadu	Used as antidote for snake bite
Uttar Pradesh	Eye pain, Used as refrigerant for cattle, 48 types of ailments

USE IN AYURVEDA

In Ayurveda, *sindhuvara* has been used as medicine since ancient times. *Nirgundi* is used in a variety of ways, both internally and externally. Some of the uses are-

- ❖ Vitex has been used in postnatal care as it brings the uterus to its original size and reduces swelling.
- ❖ It is also useful in the first stage of gonorrhoea.
- ❖ Increases digestion, useful in sciatica, slip disc, and swelling of muscles, increases sexual power and cures the weakness of penis, reduces common weakness, makes one free from diseases, increases age, reduces cough, fever, swelling of lungs and spleen, heals wounds, and is also useful in eye diseases^[11]
- ❖ The flowers are somewhat different from the rest of the plant and have a cooling energy, used in pitta-specific disorders such as liver complaints, fever, bleeding diarrhoea, and haemorrhage^[12]
- ❖ *Sindhuvara*, the white-flowered variety, is used in treating fevers, rat and snake poisoning, and intrinsic haemorrhage^[13]
- ❖ Leaf paste is applied on the navel, waist, and vagina for easy delivery^[14]
- ❖ *Nirgundi* is used as a mouthwash in the treatment of periodontal disease and to relieve tooth pain. A leaf decoction with *Piper nigrum* is used in the treatment of catarrhal fever with heaviness of head and dull hearing. Leaf oil is used to treat painful lips, fetid ear, *gandmala* (cervical adenitis), fever, venereal diseases and other syphilitic skin disorders.

CONCLUSION

Although, herbal (medicinal plants) preparations are widely used in several parts of the world, individually or in combination, data about the interactions of medicinal plants on living system is non-existent. It is only experience of the indigenous people using a particular plant and phytochemical product for treating an ailment. This review discussed the therapeutic potential of *Vitex negundo* attributing to its anti-oxidant, anti-inflammatory, analgesic, antimicrobial and its preventive medicinal activities. More *in vivo* studies of these species are required, and more advanced systematic investigation of these anti-oxidant rich species is needed before they can be used as preventive medicine.

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