

REVIEW OF *NYCTANTHES ARBORTRISTIS* AS A MEDICINAL PLANT

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Abstract:

Ayurveda is an ancient school of medicine that employs the use of plants and their extracts to cure and manage a range of diseases. Every portion of the plant has medical value and can thus be profitably exploited. It is now considered as a valuable source of a variety of unique products for the manufacture of pharmaceuticals and industrial items for a variety of diseases. The current research focuses on the plant *N. arbour-tristis*' potential phytochemicals and pharmacological action. As a result, the study's goal was to look into the chemical contents of the solvent leaf extracts as well as their anticancer and anti-inflammatory properties. The alkaloids, steroids, and other phytochemicals was discovered during the phytochemical screening of the plant. The extract had anticancer and anti-inflammatory properties. The biological activities observed in this study provide scientific confirmation for the ethno medicinal use of this plant.

Key words: *Nyctanthes arbour-tristis* L., Pharmacology, Phytochemistry.

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Introduction:

The Indian medicinal plant *Nyctanthes arbour-tristis* Linn. Of the family Oleaceae is very well known. It is regularly known as 'parijat', night jasmine, harsingar. *Nyctanthes* is Greek for 'night flower,' while *arbourtristis* is Greek for 'sad tree,' because it loses its radiance during the day. It is a traditional ethano -medicinal plant not only in

India and but also in Asia. It is native to India and can be found in large numbers below the Himalayas and south of the Godavari River. The leaves, flowers, bark, fruits and seeds of the plant all have diverse pharmacological qualities and are employed in alternative systems of medicine like Ayurveda, Sidha, and Unani. The entire plant, as well as individual sections, is utilized as herbal medicine for arthritis, malaria, spleen enlargement, and sciatica and blood purification. It is a shrub or tree that's both common and wild, as well as hardy. Through in vivo and in vitro research, the purported traditional uses have been scientifically confirmed. The current review study will provide complete information on the chemical ingredients of this plant, as well as its pharmacological activity. *N. Arbourtristis* is a sub-Himalayan plant that grows wild from Nepal to Chenabs, Burma Assam, Central India, Bengal, Rajasthan, Madhya Pradesh, Chhatanagpur, and south to the Godavari. It is grown in a variety of locations throughout India. It is moreover planted as a decorative plant in Indian gardens because of its fragrant blossoms. Its flowers bloom in the evening and fade in the morning. In its normal habitation, it grows gregariously and covers dry, low slopes and rocky gardens. [2,6]

Higher plants have a distinct and diverse variety of biochemical compounds, which is why they are sometimes referred to as chemotherapeutic agent repositories. Because they have smaller amount of side effects, they can be used to develop natural medicines. Secondary metabolites are a chemistically and taxonomically varied category of chemicals with enigmatic functions that are widely used in research, agriculture, and human therapy.[2] They are created through a sequence of metabolic processes from primary metabolites such as amino acids, carbs, and proteins. Alkaloids, flavonoids, glycosides, tannins, phenols,

steroids, resins, saponins, and other phytochemicals are found in medicinal plants utilised by both humans and animals. Antioxidants such as flavonoids, hydrolyzable tannins, phenolic acids, and others have disease-preventive properties. These fight free radicals that cause cancer, heart disease, mutagenic responses, and inflammatory reactions.[4] The beginning of the word "Paarinaha Samudra thjaathova parijatah" [17] He is known as Parijata because he was discovered in the samudra (ocean) after a long search (parinaha). Parijata's mythological past the medication According to legend, Lord Shri Krishna brought a celestial tree to earth, known as Parijata. The tree is considered to be one of the five trees (Panchavrikshas) that decorated Lord Indra's Garden in Svargaloka, according to Indian mythology (heaven). In the Vishnu Purana, the storey of Parijata is brilliantly depicted in relation to the account of Lord Krishna and his two wives. Satyabhama and Rukmini, Krishna's sisters, had a quarrel. Over the tree, over the tree, over the tree, over the tree Krishna, on the other hand, planted this ornamental plant in the Satyabhama's yard so that when it bloomed, the blossoms fell in Rukmini's yard.

Different Names of Plant:

In the languages listed below, the plant is known by the following names:

Bengali: Harsinghar, Sephalika, Seoli, Sheoli.

Urdu: Gulejafari, Harsinghar.

English: Coral/Night Jasmine.

Gujarati: Jayaparvati, Parijatak

Hindi: Harsinghar, Harsingur, Seoli, Sheoli

Tamil: Manjhapu, Pavala- Malligai, Pavazha

Kannada: Goli, Harsing, Parijata.

Lao (Sino-Tibetan): Salikaa;

Konkani: Pardic, Parizatak.

Malayalam: Pavizhamalli, Parijatakom

Marathi: Kharbadi, Kharassi, Khurasli, Parijatak

Indonesian: Srigading (Sundanese, Javanese)

Oriya: Singaraharo.

Punjabi: Harsinghar.

Sanskrit: Parijata, Sephalika.

Telugu: Kapilaganadustu, Pagadamalle, Parijat , Sepali.

Filipino: Coral Jasmine.

Malay: Seri Gading

Thai: Karanikaa

Taxonomical Classification:

Kingdom : Plantae

Division : Magnoliophyta

Class : Magnoliopsida

Order : Lamiales
Family : Oleaceae
Genus : Nyctanthes
Species : Arbotristis

Botanical Description:

N. Arbotristis is a bush or tiny tree with grey or irregular bark and stiff whitish hairs that grows up to 10 metres tall, with immature branches that are strongly quadrangular

Fig 1: Leaf of *N. Arbotristis*



Leaves:

Leaves are acute or acuminate, oval, opposite, whole or with a few huge remote teeth, slightcuneate or with short bulbous hairs rounded and few major nerves visible beneath; 6cm long, hairy petiol

Flowers:

Flowers are small, fragrant, and sessile in 3-5 pedunculate, bracteate, fascicles; peduncles are 4-angled, slender, supplementary and solitary, and in terminal short trichotomous cymes; bracts are broadly ovate or suborbicular, 6- 10 mm long, apiculate, and hairy on both sides; Tube is 6-8 mm long, orange-tinted, and roughly equals the limb; lobes are white, unequally obcordate, and cuneate.

Fig 2 Flower of *N. Arbotristis*



Seeds:

Fruits are a 1-2 cm diameter acapsule that is elongated and broad, obcordate or almost orbicular, compressed, 2-celled, reticularly veined, and glabrous. The outer layer of big transparent cells and strongly vascularised seeds are exalbuminous and testa thick. [2,6]

Fig 3: Seeds of *N. Arbotristis*



ETHNOPHARMACOLOGY

Various sections of *N. Arbotristis* are utilised in the Ayurvedic, Sidha, and Unani schools of medicine and are well known among the rural, mostly Indian tribal population for various diseases. They've also been studied to see if they have any medicinal properties. Parijat leaves were frequently used to cure a range of diseases in Ayurveda, including fever, cough, arthritis, worm infestation, and more. Tonic properties are provided by the bitter juice of the leaves. The decoction, or kadha, is beneficial for arthritis, constipation, and worm infestation. The leaves' juice is used as a digestive 3, reptile poison antidote 4, mild bitter tonic, laxative, diaphoretic, and diuretic [2, 4, 6].

The leaves are also used to increase spleen size. 5. The inhabitants of Balasore, Orissa, give an

extract of the leaves (one tea-spoonful two times a day) with honey to treat fever, malaria, and bleeding dysentery. [7] To combat skin diseases, Orissa tribesmen use the juice of three to seven leaves as a blood purifier. [7]

Fever and rheumatism 3-7 benefit from two ounces of the infusion. In the Dhenkanal area of Orissa [7], a decoction of the leaves is used to treat persistent sciatica [3,7] and is given one tea-spoonful twice a day for three days. The tribal of Orissa scrape eczematous areas using the upper side of the leaf [7].

The tribesmen of Bihar 4-7 rub six or seven of the new leaves with water and fresh ginger and administer it in times of prolonged intermittent fever. The tribals of Balasore, Orissa 4-8 use the leaves as an anthelmintic, mixing honey or sugar with common salt, especially for intestinal worms like roundworms and tapeworms, which primarily affect children. The locals of Orissa use a teaspoon of the leaf decoction mixed with honey 6-7 hours before bedtime as a tenacious and expectorant cough treatment. The caustic and bitter juice produced from the leaves is used as a laxative and colagogue. [4,7] The leaves are also used to treat menorrhoea and ulcers. [8]

Seeds and Stems:

The pulverized seeds are used to cure scabby scalp infestation 4, 6-7 and for haemorrhoids and skin diseases [5]. Traditionally, the powdered stem bark is used to treat rheumatic joint pain, its oil is used to treat eye pain, and it is massaged on the body with arjuna bark to treat interior ailments.[5] The bark of the plant is expectorant [6]. About 5 grains of the bark are eaten with betel nut and leaf to promote expectoration of thick mucus. [4,7] Bark and flowers decoction is usually administered for malarial fever. [7] The bark of the stem is pounded with *Zingiber officinale* and *Piper longum* and boiled in water. The resulting liquid is taken by the tribals in Orissa for two days to treat malaria. [7] For internal injuries, the resulting paste is mixed with Arjuna bark and applied on the body. It is also used to bind broken bones. [7]

Flower:

The flowers are bitter, astringent, carminative, stomachic and used in ophthalmology. [2,4] The flower juice is used as a tonic for the hair to avoid greying of the hair and hair loss. [7]

Roots:

A extraction of the roots is used for enlargement of the spleen. [5] The roots are conventionally used as an anthelmintic [7] and the barks as an antidyseric and antidiarrheal. [8] The tubes of

the corolla were formerly used for dyeing silk. [6] The woods form a lathing support for tile or grass roofing of the roofs. Young brushwood are worn for making baskets. The bark of the tree can be used as a tanning agent and the leaves for polishing wood and ivory.

THERAPEUTIC USES

Leaves:

The leaves are viscid and expectorant, according to legend. Fever and rheumatism can both be treated with them. Intermittent fevers can be relieved by rubbing young leaves with ginger and water. The kondhs of southwestern Orissa recommend a decoction of the leaves made over a mild fire for sciatica and malaria, and the tribal people of southern Bihar use it as a blood purifier (for skin ailments) and febrifuge. The crushed leaf juice has a strong, bitter flavour. The juice can be used as a cholagogue, laxative, diaphoretic, and diuretic. Rural communities in Gujarat's Bhavnagar area and southern West Bengal use the leaf paste externally to treat ringworm, scabies, and eczema. The fresh leaf juice is eaten with honey to treat chronic fever, and it is given to youngsters with sugar to expel threadworms and roundworms. Bitter, pungent, thermogenic, antibacterial, anodyne, anti-inflammatory, digestive, anthelmintic, purifying, diaphoretic, diuretic, and tonic properties are all present in the leaves. They're utilised to treat kapha and vata, as well as inflammation, dyspepsia, asthma, cough, itching, helminthiasis, dermatophytosis, constipation, hepatitis, haemorrhoids, grey hair, and baldness. The leaves are also utilized as a reptile poison antidote. To stimulate expectoration of thick mucus, around 5 grains of the bark are consumed with betel nut and leaves. To alleviate a dry cough, parijat leaf juice is given internally with honey. Externally, the leaves' watery paste is used to cure skin issues, particularly ringworm. To cure the same symptoms, make a special herbal oil by boiling fresh leaves in mustard oil and applying it superficially. To treat intestinal worms, mix the leaf juice with table salt. Seven regular doses (once a day) are believed to be effective in flushing out all worms. The young leaves of Parijate are used as a tonic for women. Patients with gynaecological problems should combine three fresh parijat leaves with five black peppercorns (Kali Mirch). This combination can be used up to three times per month. The leaf juice is used as a safe laxative for infants, and it

is also used to cure chronic fever when combined with other herbs.

Bark:

The bark is used by the people of Konkan (coastal districts of Maharashtra) and in Ayurvedic practice as an expectorant. In Ayurveda, a decoction of bark, leaves, roots, and flowers is used to cure severe diuresis and spleen enlargement.

Seeds:

The powdered seeds are applied to the scalp to treat dandruff. Among the tribal people of eastern Bihar, the seed paste is used in baldness; mixed with honey, the powdered seeds are administered to treat malaria. [19] The seeds are used in the treatment of bavasir (haemorrhoids). For treatment, one seed is recommended daily with water. This treatment is continued until complete cure. The seeds are crushed and a watery paste is prepared. For the treatment of gout, the locals use a decoction of parijat flowers. This decoction is administered for up to a week during the attack. The decoction of parijat seeds is used as a hair tonic and the hair is washed daily to get rid of dandruff and lice. [21]

Flowers:

The flowers are bitter, astringent, stomachic, carminative, trichogenic and useful in inflammation, opthalmopathy, flatulence, colic, dyspepsia, splenomegaly, grey hair and baldness. [20] The locals use the fragrant flowers in a variety of ways. The flowers are strung and worn as semi-ornaments and necklaces. They also have industrial uses. An orange dye extracted from the flowers is used to dye silk and cotton. The locals use the flowers in their daily bath by adding fresh flowers to the water. Using the flowers for bathing keeps the skin supple and free from any discomfort. They are also considered good for hair growth.

Though the English name of Parijat is 'tree of sorrow', it is a 'tree of joy' for the locals and traditional healers of Chhattisgarh. For them, it is a valuable medicinal as well as an ornamental plant. The locals have a rich traditional medicinal knowledge of parijat and use this herb very frequently in the treatment of many diseases.

Conclusion:

Scientists have examined the plant *N. Arborescens* intensively since it is one of the most important sources of medicinally relevant compounds. Although there have been accounts of the use of bark powder and root extract in folk medicine,

the majority of scientific investigation has been done on the leaves and seeds of *N. Arbortristis*. 6de-hydroxyloganine, propanoidglucosides (nyctoside-A), iridoid glucosides (arbortristoside-A, B, and C0), and other glucosides such arborside-C, arborside-D, and isoorside-C are the principal active ingredients in these plant sections, according to these investigations. Ethnopharmacol provided the main motivation for this huge amount of research on this plant.

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