

## Review

## Harsingar (*Nyctanthes Arbor-Tristis*): A Comprehensive Review of its Pharmacological Activities- An Overview

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**Abstract-**

Harsingar is also known as Night Jasmine and Parijat. Plants and their extracts are used in Ayurvedic medicine to treat a range of ailments (*Nyctanthes arbor-tristis*; family: Oleaceae). It covers the phytochemistry, pharmacology, and therapeutic potential of *Nyctanthes arbor tristis*. This review covers a number of biological activities, including anti-protzoic, anti-microbial, anti-viral, anti-cancer, anti-inflammatory, histamine-mediated, anti-oxidant, anti-diabetic, hepatoprotective, anti-rheumatoid arthritis, insecticidal, immunomodulatory, wound healing, and sedative properties. Numerous ailments, including as diabetes, cancer, bronchitis, fever, arthritis, and sciatica, have been claimed to benefit from it. Its antibacterial, antifungal, antiproliferative, antiparasitic, antioxidant, and hepatoprotective qualities are the subject of several investigations. One of the most valued traditional medicinal plants in India, it is mostly utilized for its seeds, leaves, flowers, and roots. Numerous studies will be conducted in order to determine the exact vaccination that will stop the virus from spreading. The lack of a vaccine or targeted treatment, however, is a serious global concern. Locals use this plant, which has wider therapeutic applications, in traditional medicine to cure colds, fevers, and coughs. Its hot water combination is intended to relieve pain and digestive problems. The Harsingar plant is a substantial source of natural chemicals that might be used to make novel medications. Additional clinical study is recommended to ascertain its safety, efficacy, and therapeutic usefulness.

**Keywords-** Harsingar, Pharmacology, Therapeutic, Medicinal, Herbal.

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**Introduction-**

A member of the Oleaceae family, *Nyctanthes arbor-tristis* Linn is a mythical plant known for its important Ayurvedic therapeutic qualities. Often known as night jasmine in English, parijat in Sanskrit, and harsinghar in Hindi, this plant is mostly found in southern Asia and is distributed across the sub-Himalayan region, extending southward to the Godavari region. In addition to other parts of the world, its geographical range includes northern Pakistan, southern Nepal, northern India, and southeast Thailand. The leaves of this plant possess considerable medicinal value, making them commercially viable. Reaching heights of 3.0 to 4.5 meters, it is a popular garden shrub that is

essential for treating inflammatory and febrile illnesses. The leaves are oval in form, with serrated edges, are placed oppositely, and have a rough, hairy feel. A decoction of the leaves is frequently used in Ayurvedic medicine as a tonic and laxative, as well as to treat malaria, sciatica, and arthritis. This plant is also well-known for its ability to control immune responses, encourage wound healing, and drive out worms. Moreover, it has larvicidal, anti-helminthic, anti-amoebic, and anti-trypanosomal qualities. Flavanol glycosides (such as astragaline and nicotiflorin), triterpenoids (like nyctanthic acid and oleanolic acid), iridoid glycosides (arborsides A, B, and C), and iridoid glucoside (arborside D) have all been found in the leaves according to phytochemical

analysis. Different parts of this plant offer varying medicinal benefits. It is found in southern India, northern Pakistan, and Southeast Asian countries including Thailand, Malaysia, and Indonesia. It is native to the subtropical Himalayas of Nepal and India. From Nepal to East Assam, Bengal, and Tripura, as well as from the central area to the Godavari in the south, it may be found in India's outer Himalayas and the Jammu and Kashmir region. These compounds make the plant more appealing for therapeutic uses. Learning about both conventional and contemporary pharmacological frameworks can help us address long-term health problems.[1,2]

The initial clinical observation was conducted on 92 out of 120 patients (76.77%) suffering from malaria, who were treated with a paste made from fresh Night Jasmine leaves over a period of 7 to 10 days. In a related study, the plant's leaves showed antimalarial qualities, clearing parasites and lowering fever in ten out of twenty patients. One of the authors pointed out that Night Jasmine leaves (NAT) may be used to successfully cure malaria. Even though the medication occasionally caused vomiting, it was judged to be safe, well-tolerated, and effective, helping the patients recover by reducing erratic fevers. From 2010 to 2013, an MD (Pharmacology) dissertation at VSS Medical College in Burla, Odisha, was supervised as a result of this observation. The present study is to carry out ethnobotanical investigations, separate phytochemical components, and investigate the pharmacological processes that underlie their medicinal uses, especially with regard to malaria.[3] Pharmaceuticals made of synthetic compounds are widely used to treat a variety of illnesses, but they frequently have a number of negative side effects. Many plant species have been studied as possible sources of bioactive chemicals for the treatment of diseases including cancer. These plants have important biological characteristics because they contain a variety of chemical components that serve several vital physiological functions. Over 50,000 of the roughly 422,000 flowering plants that have been identified worldwide are known to have pharmacological and medicinal uses. A wide range of therapeutic plants can be found in India.[4]

Ancient literature has documented the use of plants for medicinal purposes, preserving important traditional knowledge about medicinal flora that has led to the creation of numerous important modern

medications. *Nyctanthes arbor-tristis* L. (Oleaceae) is a famous medicinal plant that has been used for a very long time. This plant has been used in traditional and local medicine in a variety of ways. *Nyctanthes arbor-tristis* is used in Ayurvedic, Siddha-Ayurvedic, and Unani systems for its laxative, diuretic, anti-venom, digestive, somewhat bitter tonic, and expectorant qualities. *Nyctanthes arbor-tristis* Linn is often known as Harshingar or Night jasmine. It usually grows well in red and black soils with pH values between 5.6 and 7.5, and it favors dry to semi-arid climates. The expanding collection of information demonstrating the health dangers connected with the careless use of contemporary drugs, such as steroids, antibiotics, and different synthetic pharmaceuticals, is partly responsible for the growing acceptability of plant-based remedies.[5]

Many plant parts were used to treat illnesses, control suffering, and reduce pain throughout ancient cultures. The majority of the substances used in early medicine were derived from plants, making *N. arbor-tristis* a primary source of medicinal compounds. All cultures have documented the ancient usage of therapeutic flowers and plant components to heal ailments. The global interest in medicinal and aromatic flowers stems from their safe and effective active principles. The orange heart flower is used to dye cotton and silk; this technique was first used by Buddhist monks to color their orange robes. The Parijata is one of Devaloka's five wish-granting trees in Hindu mythology. In addition to its uses in Ayurvedic, Siddha, and Unani medicine, tribal groups in India, especially in Orissa and Bihar, acknowledge the medicinal qualities of certain sections of *Nyctanthes arbor-tristis*. Researchers have assessed the antihistaminic qualities of *N. arbor-tristis*. [6]

With roots in Indian traditions, herbs have long been used as a basic type of medicine and have become more popular all over the world in modern times. *N. arbor-tristis* is a prominent large shrub that grows in tropical and subtropical areas. It has long been used as a hair tonic and cholagogue, as well as to treat scabies, induce menstruation, and treat various skin infections. Since most medications used in ancient medicine came from plants, *N. arbor-tristis* was a key source of therapeutic chemicals.[7]

There are more than 90 different types of betel vine in the globe, 45 of which are found in India and 30 of which are found in West Bengal. Piper betel leaf

extracts have shown promise in treating a number of human illnesses. Because it contains tannins, chavicol, phenyl, propane, sesquiterpene, cyneole, alkaloids, sugars, and many essential oils, the betel leaf—considered the most important part of the plant—has been chewed for ages to relieve bad breath. These substances are known for their many therapeutic qualities, which include advantages for digestion, appetite stimulation, aromatic applications, expectoration, stimulation, antibacterial effects, and more.[8]

#### Classification-

**Kingdom:** Plantae

**Division:** Magnoliophyta

**Class:** Magnoliopsida

**Order:** Lamiales

**Family:** Oleaceae

**Genus:** Nyctanthes

**Species:** arbor-tristis

**Binomial name:** Nyctanthes arbor-tristis

**Family:** Oleaceae; Nyctanthaceae

**Unani:** Harasingaar

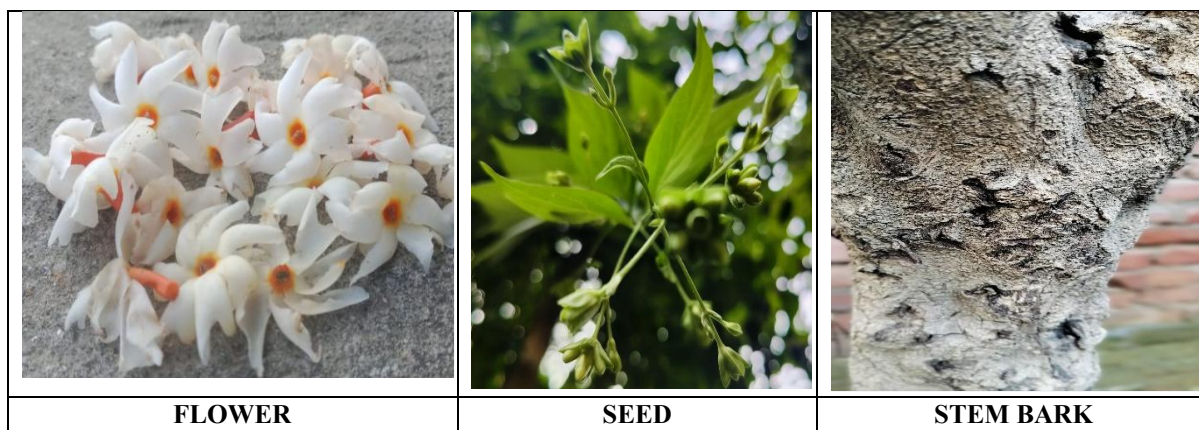
**Sanskrit:** Parijatha

**Siddha:** Pavazha mattigai

**Ayurvedic:** Paarijaata, Shephaali, Shephaalikaa, Mandaara

**English:** Tree of Sorrow, Night Jasmine, Coral Jasmine

**Marathi:** Parijathak Kannada: Parijatha [9]



#### Harsingar Plant Cultivation-

Harsingar is mostly found in tropical areas of the world. This plant needs plenty of sunshine and cannot withstand cold or icy weather, even if it blooms at night. It cannot survive in salty conditions and thrives in sandy, damp soil. It is mostly found in different regions of Asia and Southeast Asia.

**Climate:** Make sure it gets enough heat because night-blooming jasmine thrives in warm regions. If you choose to grow it indoors, keep the temperature at least 70 degrees Fahrenheit. As an alternative, planting outside is also appropriate. Freezing temperatures will kill this plant in the winter, but it will grow again in the spring.

**Soil:** Choose light, loose sandy soil for night-blooming jasmine to thrive successfully. If you are starting from seeds, start with a small shallow pot and move it when the plant is 4 to 6 inches tall. If you start with a little plant from a nursery, you can put it in your garden or in a bigger container. [9]

**Sunlight:** Make sure your plant or planter is positioned to receive full sun exposure since night-

blooming jasmine thrives in direct sunshine. An ideal spot for indoor growing is a windowsill.

**Water:** Don't overwater your night-blooming jasmine; instead, water it frequently. Examine the soil surrounding the plant, and only water it when it seems dry.

**Fertilization:** Fertilizer is usually not needed because night-blooming jasmine grows mostly self-sufficient and requires little care. If fertilization is required, it should be done sparingly, ideally once in the spring with a standard flower fertilizer.[10]

**Phytochemistry:** Numerous chemical components found in different regions of *N. arbor-tristis* have been discovered by phytochemical investigation. Apigenin, anthocyanin, D-mannitol, tannin, glucose, carotenoids, essential oils, kaempferol, nyctanthin, glycosides, quercetin, rengylone,  $\alpha$ -croctin, p-cymene, 1-hexanol, methyl heptanone, phenyl acetaldehyde, 1-decanol, and anisaldehyde are among the steroids, carbohydrates, and alkaloids. Alkaloids and 17 distinct glycosides are abundant in the bark. [11]

### Morphological Characters-

**Leaves-** In addition to polishing ivory, it may be used to finish wood in a manner akin to sandpaper. When creating homeopathic treatments, fresh leaves are used. It is used to treat fever caused by malaria. Sciatica is treated by administering the fresh juice that is extracted from the leaves. One treatment for asthma is powdered dried leaves. The leaf juice is used as a therapy for snakebite cases. To help with urinary issues, a cold infusion prepared from the leaves is administered.[12]



Leaves

**Flowers-** The blooms are usually tiny and frequently appear in clusters of two to seven. They are located at the tips of branches, either terminally or inside the leaf axils. They are sessile inside pedunculate bracteate fascicles of three to five, and they release a pleasant scent. The thin, hairy, four-angled peduncles can be found in short terminal trichotomous chymes as well as in auxiliary and solitary arrangements. The calyx is 6 to 8 mm long, narrowly campanulate, hairy on the outside and glabrous on the inside, with ciliated margins and a truncation or faint teeth or lobes.[13]

**Fruit-** The fruit is around 2 cm in diameter, has a flat, brown look, and is shaped like a heart or spherical capsule. It has two cells, each holding a single seed, and a transverse aperture at the top. The epicarp is made up of closely packed, polygonal epidermal cells with slightly anticlinal walls that are coated in a thin cuticle, according to microscopic analysis. One to three layers of collenchyma, spongy parenchymatous tissue, sclerenchymatous fibers, and oil glands are found under this layer.

**Seed-** Each cell contains one flattened seed. The thick testa of the exalbuminous seeds is made up of

an outer layer of big, translucent, highly vascularized cells.

**Stem and Bark-** This species is a big shrub with quadrangular branches that may reach a height of 10 meters. The *N. arbor-tristis* plant has dark gray or brown bark with a hard, gritty texture. Due to the loss of circular patches, the bark's surface is dimpled, giving it a patchwork look with gray-brown areas. The inner bark has a unique phloem zone that is both collapsed and non-collapsed, and it is soft and creamy white.

**Cultivation-** Because of its beautiful blooms and pleasant scent, this plant is often planted in gardens. Both cuttings and seeds can be used for propagation. However, the seeds tend to have a low germination rate, attributed to phenolic compounds that leach from the soaked seeds. Furthermore, it has been demonstrated to be advantageous to treat the seeds with antioxidant solutions such polyvinylpyrrolidone and polyvinylpolypyrrolidone before germination.[14]

**Propagation-** When grown in Murashige and Skoog's medium supplemented with 2, 4-dichlorophenoxyacetic acid, naphthalene acetic acid (NAA), and coconut milk, *N. arbor-tristis* can be multiplied in vitro from isolated immature embryos using removed cotyledons, hypocotyls, roots, leaves, and internodal bases of plantlets. Additionally, plantlets can be regenerated in MS medium enriched with thiadiazuron (TDZ) and 6-benzyladenine (BA). Rooting is accomplished ex vitro by immersing the basal cut ends of regenerated shoots in indole-3-butyric acid (IBA), followed by transplantation into sterile soil within plastic pots. Plantlets with strong roots and branches may flourish in garden soil in earthen pots, with an 85% survival rate.[15,16]

**Phytochemicals-** Numerous phytochemicals, including as phenolic compounds, tannins, cardiac glycosides, terpenoids, saponins, steroids, carbs, proteins, and alkaloids, are found in *N. arbor-tristis*.[17]

**Phyto-constituents From Flowers-** The flowers include flavonoids, anthocyanins, modified diterpenoid nycanthin, and an essential oil. They also include three known iridoid glucosides: arboreside-C, 6- $\beta$ -hydroxyloganin, and nycanthoside; a new iridoid glucoside, 6-O-trans-cinnamoyl-7-O-acetyl-6- $\beta$ -hydroxyloganin; and an antiplasmodial cyclohexylethanoid termed renyolone. Interestingly, arboreside-C changes into

an isomeric structure after a few months, with the benzoate group moving to C-6-OH to produce isoarboreside-C.[18]

**Philology-** "Paarinaha Samudrath jaatho va parijatah" sums up the philological interpretation of Parijat. Originating in the ocean, this phrase, Parijata or Parijat, denotes the outcome of a thorough search or investigation.[19]

#### **Physio-Chemical Property Of Leaves Of Nyctanthes Arbotristis Plant-**

S.NO	Chemical Compounds	Percentage
1	Color	Dark Green
2	Appearance	Viscous Semi-Solid
3	Moisture	50.01%
4	Ash	13.98%
5	Lignin	15.87%
6	Crude Fiber	9.41%
7	Fat	2.10%
8	Protein	15.02%
9	Carbohydrate	9.48%
10	Acid value	76.27%
11	Iodine value	76.27%

Table No- 01

#### **Chromatographic Analysis-**

The main components are assessed using various chromatography techniques, such as thin layer chromatography (TLC), gas chromatography (GC), high-performance liquid chromatography (HPLC), and column chromatography (CC). The different components displaying antioxidant qualities were also identified using the TLC bioautography test. N-hexadecanoic acid and cis-9-hexadecenal were found to be the main components by gas chromatography-mass spectrometry (GC-MS)[20,21]

#### **Pharmacological Activity-**

Organic compounds derived from *N. arbor-tristis* remain an important part of modern drug discovery, providing physiologically potent and structurally diverse lead molecules for the development of novel therapies with fewer side effects and greater efficacy. Specifically, medicinal plants are still an invaluable source of bioactive chemicals that have historically affected the creation of several contemporary drugs. This is one of the important plants that are notable from an ethnopharmacological perspective.[26]

**Immuno-stimulant activity-** Humoral and cell-mediated responses have shown that the aqueous

leaf extract of NAT is a potent immunomodulator. Additionally, flowers have immunostimulant qualities, which means they strengthen the cell-mediated immune system. Arbotristosides A and C, two iridoid glucosides that were isolated from the plant's seeds, have an immune modulator effect when exposed to the root and seed ethanolic extract of NAT.[22]

#### **CNS depressant action-**

To investigate the plant's ability to depress the central nervous system, researchers used water-soluble fractions of ethyl alcohol extracts from the plant's seeds, bark, flowers, and leaves. It has previously been established that a plant's bloom has sedative qualities, while its leaves offer hypnotic and calming effects. An ethanol extract of the plant was administered to adult male Swiss mice, and its pharmacological action was examined. The CNS depressing activity was evaluated in rats using pentobarbital sodium-induced sleep extension.

#### **Anti-fungal activity-**

Three of the most prevalent clinically pathogenic fungi—*Aspergillus Niger*, *Penicillium*, and *Aspergillus flavus*—were used to investigate the antifungal activity of different parts of the NAT plant.

Distilled water, methanol, and chloroform were used to extract both fresh and mature leaves, seeds, stems, bark, and flowers after they had been collected and dried. The antifungal activity of the extracts was determined using the good diffusion technique and represented as a "zone of inhibition" of fungal growth. The results showed that only distilled water extract of NAT stem and bark had antifungal activity against *A. Niger*, whereas chloroform extract of leaves was only efficacious against *A. flavus*. The study found that the methanolic extract of NAT leaves, stem, and bark had the most antifungal efficacy against *Aspergillus* and *Penicillium*.[23]

#### **Antiallergic activity-**

There was significant anti-suffocation protection provided by the distilled extract of *Nyctanthes arbotristis* leaves. *Nyctanthes arbotristis* contains arbotristosides A and C.[22]

#### **Nutritional Value of night jasmine-**

Harsingar leaf contains carotene, fructose, tannic acid, benzoic acid, ascorbic acid, methyl salicylate, amorphous resin, oleanolic acid, glucose, and flavanol glycosides.

The flowers are very beneficial since they contain glycosides and essential oils. The seeds include

myristic, oleic, and palmitic acids. This plant's bark is beneficial since it contains glycosides and alkaloids. Extracts from this flower have antiviral and antifungal properties. It contains hepatoprotective and immunostimulant properties in addition to antileishmanial actions.[24]

Determine the total phenolic content and antioxidant activity of the methanolic leaf extract of *Nyctanthes arbortristis* L. in vitro. Five basic extracts from different parts of the plant were used to evaluate the sample in vitro, and it was shown to be useful in treating a range of illnesses. These assessments come to the conclusion that it's time to use centuries of knowledge about *Nyctanthes arbortristis* to contemporary medical research. This will motivate researchers to discover more about the substantial medicinal potential of the Harsingar plant in order to properly construct the traditional Ayurvedic system.[25]

#### **Pharmacological Properties-**

- Antioxidant properties
- Antiviral properties
- Antiplasmodial properties
- Antiallergic properties
- Sedative properties
- Antileishmanial properties
- Antimicrobial properties
- Antirheumatic properties
- Antimalarial properties
- Immunostimulatory properties
- Hepatoprotective properties
- Central nervous system depressant effects

**Anti-oxidant activity-** According to recent studies, *Nyctanthes arbor-tristis* leaves and stems are rich in herbal antioxidants. Flavonoids, tannins, saponins, glycosides, alkaloids, steroids, and phenolic compounds were among the substances found in the ethanolic extract of these components, according to phytochemical research.[27]

**Anti-microbial activity-** A wide range of antibacterial action against gram-positive and gram-negative bacteria, including strains like *Streptomyces*, is demonstrated by the oil that is produced from the leaves, seeds, and bark. *Escherichia coli*, *Pseudomonas aeruginosa*, and *Staphylococcus subtilis* were used to assess the bactericidal properties of the aqueous and methanol extracts from the young leaves of *N. arbor-tristis*. Interestingly, *P. aeruginosa* became resistant to the liquid extract, while the other two extracts continued to be effective against the microbes. [28]

**Uses-** The leaves have a strong, bitter taste and are used as antibacterial, anti-inflammatory, and antihelminthic agents in addition to being used to treat fever and fungal skin infections. Children are given an extract from the bitter leaves to help them get rid of roundworms and threadworms. Leaf juice is used as a remedy for snake bites and reptile venoms, as well as for rheumatism and fever. The bitter and astringent blooms are used as a carminative and to cure eye disorders. They help treat rheumatism, sciatica, and persistent remittent fever. They are especially helpful for relieving children's constipation because of their moderate purgative qualities. They are also used as an antidote for snake bites and to cure bronchitis. The tree's bark is used to cure ulcers, bleeding gums, and eye conditions; a decoction of the bark is especially useful for the latter. Additionally, fresh leaves are used to make homeopathic treatments.[29]

#### **Medical And Therapeutical Application-**

Coral jasmine functions as a mild purgative and has antibacterial, anti-inflammatory, expectorant, and bitter tonic qualities.

- Children who are constipated might benefit from night jasmine.
- The flowers have carminative, ophthalmic, stomachic, bitter, and astringent properties.
- The leaves are used to cure rheumatism, fever, arthritis, and other uncomfortable conditions.
- To treat roundworm infestations, fresh leaves are treated with mustard oil and administered topically.
- The leaf juice is mixed with regular salt to get rid of intestinal worms.
- Coral jasmine acts as an antidote for snake bites and is useful in the treatment of bronchitis, dry cough, and fungal skin diseases.
- The seeds can be used to treat scurvy, baldness, and piles.
- Gout is treated with an infusion of Night Jasmine flowers.
- Additionally, headaches, gastritis, hepatitis, diarrhea, vertigo, and restlessness are all treated with coral jasmine[30,31]

#### **Therapeutic Effects-**

**Joint Pain-** According to Ayurvedic medicine, joints and bones are areas affected by Vata dosha, and joint pain is mainly caused by an imbalance in Vata.

Because Parijat oil balances Vata, it can effectively relieve the discomfort associated with bone and joint pain.

**Antipyretic-** By influencing the hypothalamus, parijat has the power to decrease fever by lowering body temperature.

**Anthelmintic-** By affecting the neurological system or metabolic activities of parasitic worms, parijat can eradicate or drive them out of the intestines.

**Laxative-** By increasing the colon's peristaltic activity, parijat facilitates bowel motions and reduces constipation.

**Expectorant-** Parijat stimulates bronchial gland production, which helps the respiratory system eliminate mucus.

**Anticancer-** This plant may be able to stop cancer cells from proliferating and spreading. It has the ability to trigger apoptosis and stop cancer from spreading to other parts of the body.

**Anti-Diabetic Activity-** *Nyctanthes Arbortristis* root extract is used to treat diabetes. This extract, which was produced using a hot continuous extraction process using 50 grams of root powder and 400 milliliters of methanol over 18 hours, has safe and potent anti-diabetic activities.[32]

**Side Effect-** Although the Parijat plant is well-known for its many therapeutic benefits, it's vital to be aware that it may also have some negative effects. According to a number of internet sites, stomach discomfort, nausea, vomiting, and liver damage are possible side effects of using Parijat.

#### **Pharyngeal or nasal cancer-**

Regular usage of parijat leaves is an uncommon but possible harm. These leaves' high tannin content may increase the risk of nasal or pharyngeal cancer, especially in smokers and tobacco product users.[33]

**Gastric lesions-** These are stomach sores or ulcers that can cause pain and bleeding. They may be formed in part because Parijat leaves contain methyl salicylate, a substance with analgesic and anti-inflammatory properties. On the other hand, too much methyl salicylate might damage the stomach's lining and cause sores.[34]

**Medicinal Significance-** Hindu literature emphasize the profound therapeutic qualities of the Parijat tree, which is considered a holy plant. The Parijat plant is a contender for commercial use since each section of it has unique therapeutic qualities. It is currently recognized as a major source of a variety of special chemicals that may be used to cure a wide

range of illnesses and to make some industrial goods.[35]

Numerous Ayurvedic scriptures attest to the Parijat plant's significant medicinal importance. Numerous Ayurvedic literature have documented *Nyctanthes arbor-tristis*'s medicinal potential for treating a variety of mental and physical health conditions. This herb has historically been used as an Ayurvedic treatment for a number of illnesses.[36]

Significant therapeutic qualities, including as anti-microbial, anti-malarial, anti-inflammatory, anthelmintic, antioxidant, anti-diabetic, and anti-allergic effects, are present throughout the Parijat plant (*Nyctanthes arbor-tristis*). This plant's roots are used to treat emaciation, while its stem bark is used to heal internal injuries, diarrhea, and palate ulcers. *Nyctanthes arbor-tristis* leaves are widely utilized for a number of purposes in Ayurvedic and tribal medicine.[37]

**Toxicity-** Rats are poisoned by an ethanolic extract of *N. arbortristis* leaves, according to research. 16 gm/kg was found to be the median lethal dosage (LD). At a dose of 2.0 gm/kg, there were no fatalities; but, at 32 gm/kg, a notable mortality rate of 75% was noted. Over the course of six days, rats given an oral ethanol extract of the leaves at dosages of 1, 2, and 4 gm/kg per day developed stomach ulcers. Additionally, the extract showed dose-dependent irritating effects that caused albino mice to produce unformed, semi-fluid, collagenous feces as well as purgative activity. Furthermore, the person who processed the dried leaves developed vesicular sores on both hands, and the extract caused conjunctival congestion and edema in a rabbit's eye.[38,39]

**Conclusion-** Often referred to as night-flowering jasmine, Parijat, or Harshringar, *N. arbor-tristis* Linn. (family: Oleaceae) a significant role in the ancient medical systems of Asia, including the Indian subcontinent. The leaves, seeds, flowers, roots, and bark of plants have the potential to be bioactive.

Antibilious illnesses, fever, arthritis, sciatica, gynecological problems, liver ailments, parasite infections, and dermatological diseases are all commonly treated with this in folk and traditional medicine. This plant's continuous use in a variety of societies highlights its presumed medicinal benefits and calls for a thorough scientific investigation. Its natural compounds might be used as models for contemporary medicine development.

Only after offering structurally varied and physiologically effective lead molecules for the creation of innovative treatments is this feasible.

Steroids, terpenoids, flavonoids, phenolic compounds, iridoid glycosides, alkaloids, and other lipophilic and volatile components make up the rich and varied chemical profile of *N. arbor-tristis*. These secondary metabolites provide a wide range of pharmacological effects and are dispersed unevenly across the various plant sections. The plant has anti-inflammatory, antioxidant, analgesic, antidiabetic, anti-arthritis, cytotoxic, antimicrobial, antimalarial, anthelmintic, hepatoprotective, larvicidal, bronchodilatory, immunomodulatory, neuroprotective, and wound-healing qualities. All of these results point to *N. arbor-tristis* as a potential source of natural medicinal substances.

Harsingar has been used for over a century to treat a variety of conditions, including antiepileptic, anti-HIV, anti-cancer, antioxidant, antiallergic, and anti-malarial. Compared to other medicines, these drugs are less harmful.

However, the use of these plants as immunomodulators and first treatment agents during COVID-19, as well as to increase immunity, makes the review's conclusion very handy.

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