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A Comprehensive Review on *Argyeria Nervosa*

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Abstract

Argyeria nervosa plant is an example of a hallucinogenic plant of (Convolulaceace) family. It is a perennial climber native to the Indian subcontinent and introduced worldwide. Common names include vidhara, elephant creeper and woolly morning glory .it is a popular Indian medicinal plant which has been used for a longly in the traditional ayurvedic Indian medicine for various types of diseases. This plant includes a wide range of photo chemical constituents that have been isolated. The pharmacological study of plants is being done for anti-inflammatory, anti-oxidant, anti-microbial, wound healing, anti-viral, anti-convulsant and central nervous depressant activities.

Keywords: *Argyria nervosa, Convolvulaceae, Ergoline alkaloids, Nootropic, Ethnopharmacology, Wound healing.*

1. Introduction

Argyeria nervosa (family: Convolvulaceae), known as elephant creeper or wooly morning glory, grows along river banks, lake margins, and in semi-deciduous forest undergrowth. Its leaves contain quercetin-1-triacontanol, β-sitosterol and quercetin. The plant has been traditionally employed for anti-viral, anti-bacterial, anti-fungal and anti-inflammatory purposes and is claimed to possess rejuvenating, anti-ageing and spermatogenic effects. [1] Seeds contain the highest levels of psychoactive constituents while leaves and roots in India are commonly used as antiseptic and anti-inflammatory agents. In Unani medicine, the roots are described as aphrodisiac and diuretic and are used for gonorrhoea. The leaves function as antiphlogistic emollients, local stimulants, rubefacients, and other dermatological. Leaf extracts are administered internally for boils and swellings, while external applications are used for eczema, ulcers, ringworm, and other skin conditions. The seeds function as hypotensive, spasmolytic, and general tonics. [2] Additional reports include Anti-convulsant and nootropic activities [3,4]. Topical ethanol extract of *Argyeria nervosa* leaves significantly accelerates wound healing in both normal and diabetic foot models. [5,6]

Fig (1) - Plant of Argyeria nervosa

Figure:

Scientific Classification

- **Kingdom:** Plantae
- **Phylum:** Tracheophyta (vascular plants)
- **Class:** Magnoliopsida (dicotyledons)
- **Order:** Solanales
- **Family:** Convolvulaceae
- **Genus:** *Argyeria* Lour.
- **Species:** *Argyeria nervosa* (Burm. f.) Bojer

Key Taxonomical Details [32]

- **Synonyms:** Commonly referred to as *Argyeria speciosa* (L. f.) Sweet, *Convolvulus nervosus* Burm. f., and *Lettsomia nervosa* (Burm. f.) Roxb.
- **Varieties:** Two main botanical varieties are often recognised: *A. nervosa* var. *nervosa* and *A. nervosa* var. *speciosa*.
- **Etymology:** The genus name *Argyeria* is derived from the Greek *argyros* (silver), referring to the silvery, hairy underside of the leaves, while *nervosa* refers to the prominent veins on the leaves.
- **Appearance:** The plant is a robust climber with woody stems and milky latex. Leaves are large, cordate (heart-shaped), and typically 15–30 cm long. Flowers are funnel-shaped, pink to purple with a darker throat, typically blooming from July to April.
- **Habitat:** It is found in open forests and scrub jungles, thriving in tropical climates.

Vernacular name

Gujarati: Samundrasosh, Vardharo
Hindi: Samandar-ka-pat, Samundarsokha, Ghav-patta
Bengal: Bichtarak, Guguli
Malayalam: Samudrapachcha, Samudrapala, Samudrastokam
Marathi: Samandarshokh, Samudrasoka

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Sanskrit: Antakotarapushpi, Chhagalanghhri, Vryddhadaraka, Sam

MORPHOLOGY

Root

Argyeria nervosa is often known as elephant creeper is a type of plant that is generally tells it age through its texture.

To examine its roots and stems it is distinguished in the following way.

The roots generally vary significantly depending on its their maturity.

Younger roots: They usually measure only up to 2 to 4mm and are quite delicate. They have smooth and brownish skin. The younger roots when cut into a slice generally display a dark ring right in the middle .

Mature roots: when the plant ages the roots are thicken reaching up to 25mm or more. The root skin becomes rough and bumpy due to a high concentration of small pores. The older roots include a colourless tertiary phloem in the internal structure which is paired with a pinkish, crescent-shaped "tertiary xylem".

The stems undergo a similar transformation as it climbs.

Early stage: when the stem is young, it appears pure white and feels soft to touch.

Maturity: when the stem reaches about 25mm in thickness, it loses its soft appearance. But it develops deep vertical ridges and is covered in elongated pores[26,30].

Leaf

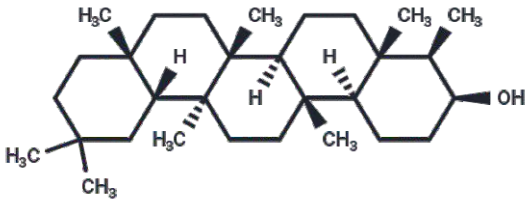
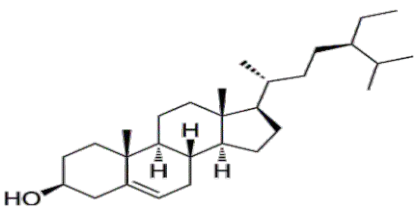
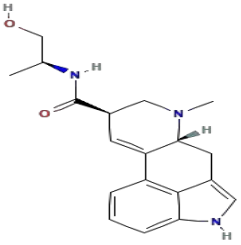
The lower surface of the leaf is fully covered with hair, which gives the leaf silver a soft woolly appearance. The upper surface of the leaf is generally green, glorious and also shows the marking of nerves by slight depressions. The mature leaf is Dorsiventral, Unicostate with a midnerve and several lateral nerves which are cordate at the base. The margin is entire but slightly wavy near the base. On the midrib 14-20 pairs of lateral nerves arises and on the neighbouring nerve the anterior branch unites with the posterior branch which are connected by an arched nervule[26,31].

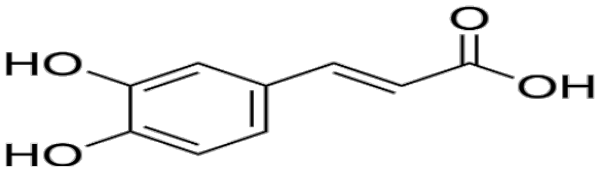
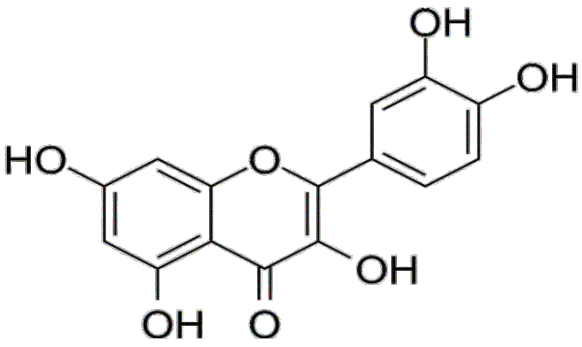
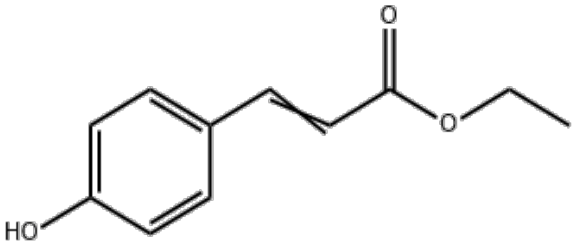
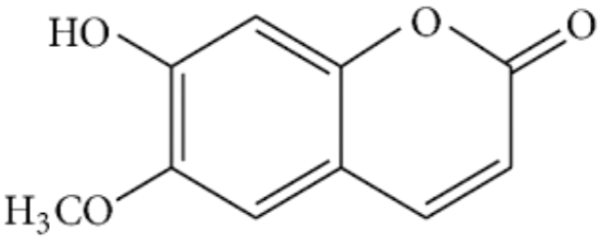
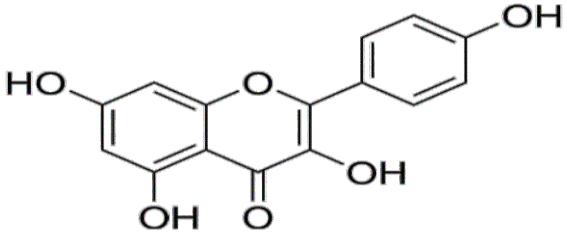
Seeds

The seeds of *Argyeria nervosa* are commonly known as Hawaiian Baby Wood Rose. They are easily identified by their distinct, roughly triangular shape which include two flat or slightly concave faces and one round face. Leafs measure roughly 0.5 to 0.75cm in length and up to 5mm in width. The seeds have a generally hard, stony texture which makes them difficult to break easily. It's include a hilum generally a brown, circular mark nestled within a small depression at the seeds wider end. The surface of the leafs is generally smooth, and often dusted with persistent patches of white, papery pulp[26,29].

Isolated Chemical Constituents

Table 1: Isolated Chemical Constituents

S.no	Chemical Constituents	Structure	Effect	References
1.	Epifriedelinol		Anti- inflammatory, antitumor, and antioxidant activities	17
2.	β-Sitosterol		lower cholesterol levels	18
3.	Ergometrine		prevent or treat postpartum haemorrhage	19

4.	**Caffeic acid**		antioxidant**,** anti-inflammatory**, and** anticancer **properties**	20
5.	**Quercetin**		**antioxidant**, **antiviral**, and **anti-inflammatory** agent	21
6.	**Hexadecanyl p-hydroxycinnamate**		antioxidant **and** antimicrobial **activities**	22
7.	**Scopoletin**		antihypertensive**,** anti-inflammatory	23
8.	**Kaempferol**		anticancer, antidiabetic, and cardio protective activities	24,25

2.Phytochemical constituents of *Argyeria nervosa*

The following table summarizing the major phytochemicals classes found in Argyeria nervosa and their associated biological activities along with its wound healing capability.

These plants secondary metabolites play crucial roles in environmental interaction and defence form the basis of many traditional and modern medicines

Table 2: Phytochemicals constituents of Argyeria nervosa

S.No	Compound Class	Examples (Known Bioactive Compounds)	Part of Plant	Reported Activity	References
1	**Alkaloids**	Ergine, isoergine, ergometrine, chanoclavine, lysergol	Seeds (high conc.), leaves, roots	Anti-inflammatory, antibacterial, antiviral, antifungal, nootropic, anticonvulsant	[11,12]
2	**Flavonoids**	Quercetin, rutin, kaempferol	Leaves, stem, roots	Wound healing, anti-inflammatory, antioxidant, antimicrobial, antifungal	[13,28]
3	**Saponins**	Diosgenin (as sapogenin)	Leaves, stem, roots	Anti-inflammatory, antioxidant, antimicrobial	[12,14]
4	**Triterpenoids/ Steroids**	β-sitosterol,1-triacontanol, epifriedelinol, stigmasterol	Leaves, roots, fruit	Anti-inflammatory, wound healing, antiseptic.	[12,13,15]

3. Pharmacological Activities of *Argyeria nervosa*

1. *Argyeria nervosa* (family Convolvulaceae), commonly known as Hawaiian baby wood rose, is a medicinal plant known for its rich content of ergoline alkaloids and diverse pharmacological properties[7].
2. The plant contains lysergic acid amide (LSA), lysergic acid hydroxyethyl amide (LSH), ergometrine, chanoclavine, elymoclavine, agroclavine, flavonoids, tannins, phenolic compounds, saponins, and glycosides[8].
3. Central Nervous System Activity LSA acts as a partial agonist at serotonin receptors, particularly 5HTA, 5HTA, and 5HTC receptors. This leads to modulation of thalamocortical signalling, altered sensory perception, mood changes, and cognition[9].
4. Sedative and Anxiolytic Effects Partial agonism at 5HTA receptors and indirect modulation of GABAergic pathways result in reduced anxiety and sedative effects at lower doses[10].

Argyeria nervosa – Types of Formulations & Market Examples

Table 3: Types of Formulations & Market Examples

S.NO	Formulation Type	Dosage / Formulation Category	Description	Marketed Examples	Images
1	**Raw Powder (Churna)**	Traditional herbal formulation	Dried root or whole plant powdered; used directly or with honey/warm water	Yuvika Vidhara Powder, Zandu Vidhara Churna	
2	**Capsules**	Solid oral dosage form	Powdered root or standardized extract filled in capsules	Himalaya Argyeria Speciosa Capsules, Shipra Vidhara Capsules	
3	**Tablets**	Solid oral dosage form	Compressed extract or powdered drug for accurate dosing	Zyrex Vidhara Tablets, Patanjali Vidhara Vati	

4	**Liquid Extract**	Liquid herbal formulation	Hydro-alcoholic or aqueous extract for faster absorption	Vidhara Liquid Extract (Ayurvedic suppliers)	
5	**Infused Oil**	Topical formulation	Herb infused in carrier oil for external application	Vidhara Taila	
6	**Standardized Extract Powder**	Bulk / nutraceutical ingredient	Extract with fixed drug-extract ratio (e.g., 10:1)	Vidhara Extract Powder (pharma use)	

Conclusion

Argyeria nervosa stands with ayurvedic wisdom and modern pharmaceutical sciences. Traditionally, it is used as a memory enhancer, improves reproductive health, and supports vitality. In modern Pharmaceutical research, it yields results in the field of green nanotechnology, such as antibacterial and anticancer-treating nanoparticles. If it is not used efficiently and the extraction and use of Argyria nervosa is not done safely, it can be lethal due to its high content of alkaloids. Argyeria nervosa shows huge potential in treating and curing diseases, but it requires a transition from animal studies to human clinical studies and standardised dosing to unlock its full potential without any risk.

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