J. Biodivers. Conservation 10(1): 26-31 ISSN: 2457-0761 (online)
2026 http://www.aprfjournal.in

Review Article

Phytomedicinal values of *Argyreia nervosa* (Burm.f.) Bojer (Convolvulaceae): a medicinal climber

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DOI: https://doi.org/10.5281/zenodo.18395204

Article Details: Received: 2026-01-05 | Accepted: 2026-01-27 | Available online: 2026-01-28

Abstract: *Argyreia nervosa* (Burm.f.) Bojer is a perennial woody climber belonging to the family Convolvulaceae, widely recognized for its extensive use in traditional systems of medicine. Various plant parts, including roots, leaves, seeds and flowers, have been employed therapeutically for conditions ranging from neurological disorders to inflammation and general debility. Present study compiles the available information on the ethnomedicinal uses, phytochemical composition and experimentally validated pharmacological properties of *A. nervosa* within a structured scientific framework. Particular emphasis has been placed on its traditional medicinal relevance, bioactive constituents, pharmacological potential and ecological adaptability. Visual documentation through original field photographs has been incorporated to enhance botanical authenticity and facilitate accurate morphological interpretation. Furthermore, the study highlights existing research gaps and proposes future directions necessary for the scientific validation and integration of *A. nervosa* into evidence-based phytomedicine.

Keywords: *Argyreia,* ethnomedicine, medicinal climbers, pharmacological activity, phytochemistry

Introduction

Medicinal plants continue to play a pivotal role in primary healthcare systems, particularly in developing countries where traditional knowledge system is practised widely as they are easily accessible (Kumar et al., 2013; Pradhan et al., 2025). Among medicinal climbers (Sharma et al., 2019), *Argyreia nervosa*

(Figure 1) has attracted increasing scientific attention due to its broad therapeutic spectrum and long-standing use in indigenous and classical medical traditions (Devarakonda et al., 2022). The species is commonly found in India, Sri Lanka, Australia, Thailand and Myanmar (Lawand and Shimpale, 2024). Morphologically, *A. nervosa* is characterized by large, cordate leaves and conspicuous funnel-shaped flowers. The flowers, exhibiting pale petals with a deep violet or purple throat, are represented as the most distinctive diagnostic features of the species (Saxena and Brahmam, 1995). Historically, *A. nervosa* has been described as a rejuvenative, nervine tonic and can also be used for general weakness (Galani et al., 2010; Saradar et al., 2024).

Figure 1: Plant parts of *A. nervosa*, a) Flower, b) Leaf and c) Habitat

Despite its extensive traditional usage, scientific documentation of the phytomedicinal attributes of *A. nervosa* remains fragmented and dispersed across studies. The present study aims to consolidate botanical, ethnomedicinal, phytochemical and pharmacological information into a coherent, research-oriented narrative, thereby bridging traditional knowledge with modern scientific investigation.

Methodology

Present study is based on a qualitative synthesis of published literature documenting traditional medicinal uses, phytochemical investigations and experimentally observed biological activities of *A. nervosa* using the key words like “medicinal uses of *Argyreia nervosa*”, “ethnomedicinal uses of *Argyreia nervosa*”, “pharmacological values of *Argyreia nervosa*” and “botany of *Argyreia nervosa*”. Emphasis was placed on integrating ethnomedicinal knowledge with pharmacological evidence rather than focusing on isolated bioactivity claims. Botanical descriptions were verified through direct field observations, supported by original photographic documentation highlighting vegetative and floral morphology. The collected information was tabulated and presented (Kumar, 2025; Jena et al., 2025).

Results and discussion

The study indicates that *A. nervosa* possesses a wide range of phytomedicinal properties supported by traditional usage patterns and experimental evidence (Table 1). The phytomedicinal importance of different plant parts of *A. nervosa* has been reported in earlier scientific studies. The study highlights those various parts of the plant, like leaves, roots and seeds, that possess diverse therapeutic properties, supporting its traditional and pharmacological relevance. The leaves of *A. nervosa* have been reported to exhibit wound-healing activity, indicating their potential use in the treatment of cuts and skin injuries. They also show nematicidal activity, suggesting usefulness in controlling plant-parasitic nematodes. Additionally, the leaves possess antidiabetic properties, supporting their role in managing blood glucose levels (Kulkarni and Kamble, 2021). The roots demonstrate a wide range of bioactivities. They are reported to have analgesic properties, indicating pain-relieving potential (Bachhav et al., 2009). Studies also highlight their aphrodisiac effects and psychotropic activity, reflecting their influence on sexual health and the central nervous system (Patel et al., 2022). Furthermore, the roots show pancreatic lipase inhibitory activity, suggesting potential anti-obesity applications, along with anti-inflammatory effects, supporting their traditional use in inflammatory conditions (Srivastava et al., 1972).

Table 1: Phytomedicinal uses of *A. nervosa*

Plant parts	Uses	Source
Leaves	Wound healing activity	Singhal et al., (2011)
	Nematicidal activity	Parveen et al., (1990)
	Antidiabetic potential	Kulkarni and Kamble, (2021)
Roots	Analgesic activity	Bachhav et al., (2009)
	Aphrodisiac potential	Patel et al., (2022)

	Psychotropic effects	Galani and Patel, (2011)
	Pancreatic lipase activity	Kumar et al., (2011)
	Anti-inflammatory activity	Srivastava et al., (1972)
Seeds	Antibacterial and antifungal activity	Mishra and Chaturvedi, (1978)

The seeds of *A. nervosa* exhibit antibacterial and antifungal activities, indicating their effectiveness against pathogenic microorganisms and their possible use in treating microbial infections (Mishra and Chaturvedi, 1978). The study demonstrates that *A. nervosa* is a multi-therapeutic medicinal plant, with different plant parts contributing distinct pharmacological activities, thereby validating its importance in traditional medicine and modern phytopharmacological research.

Research gaps and future perspectives

Although *A. nervosa* is well recognized in traditional medicine, systematic scientific validation of its therapeutic claims remains inadequate. Standardized protocols for extraction, formulation, dosage determination and quality control are largely lacking. Toxicological evaluations, particularly for seed-based preparations are insufficient to support widespread clinical use (Susikumar et al., 2024). Future research should focus on pharmacokinetic and pharmacodynamic profiling of key bioactive compounds, as well as their synergistic interactions in complex biological systems. Molecular and mechanistic studies exploring neuroprotective, anti-inflammatory and adaptogenic pathways would substantially enhance understanding of the plant's medicinal potential. Additionally, conservation-oriented research is essential, as increasing medicinal demand may exert pressure on natural populations of the species.

Conclusion

Argyreia nervosa is a medicinally important climber with a rich history of traditional use and growing scientific relevance. Its diverse phytochemical profile underpins a wide range of therapeutic applications, particularly in neurological health, inflammation management and rejuvenative therapy. Integrating traditional ethnomedicinal knowledge with rigorous scientific validation offers a promising pathway for the development of evidence-based phytomedicines derived from this species. Comprehensive research addressing standardization, safety, efficacy and conservation is essential to fully harness the phytomedicinal potential of *A. nervosa* as a sustainable natural resource.

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