

THERAPEUTIC USES OF *SESBANIA GRANDIFLORA* (L.) POIRET BY THE PEOPLE OF BARGARH DISTRICT IN WESTERN ODISHA, INDIA

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Article Received on 07/01/2025

Article Revised on 27/01/2025

Article Accepted on 16/02/2025

ABSTRACT

Sesbania grandiflora (L.) Poiret is a fast-growing dry deciduous tree species, belonging to Fabaceae family. It is locally known as 'Agasti' and it is also highly favored by the people of Western Odisha. In Odisha, the flower of Agasti is offered to their deities during worship in the month of Kartik (Oct.-Nov.). In the Ayurvedic system, the whole plant of Agasti is medicinally important, as it is an important ingredient in the preparation of some Ayurvedic medicinal formulations.

KEYWORDS: Therapeutic uses, *Sesbania grandiflora*, People, Bargarh district, Western Odisha.

INTRODUCTION

Plants have a significant role in the life and culture of the human race. The World Health Organization (WHO) has estimated that 80% of the world's population depends on traditional medicine for primary health care.^[1] The people living inside and around the forest localities have faith and belief in the efficacy of the plants. They have utilized herbal medicine to care for their health since the dawn of civilization. *Sesbania grandiflora* (L.) Pers. is a revered plant in Ayurvedic medicine in India. It is a member of fabaceae family. It is locally called Agasti; Vegetable hummingbird tree, Sesban in English, Agastya in Sanskrit and Agast in Hindi.

This plant holds significant cultural importance in various regions, particularly in South India. The leaves and flowers of the Agasti plant are often used in religious rituals and offerings, especially to Lord Shiva. In some traditions, the plant is considered sacred and is believed to have divine properties. In Kartik masa (October-November) the people of South India.^[2] and Odisha worshipped by offering the leaves and flowers to their deity. The plant is also known for its potential commercial applications, such as leaves as fodder, wood as firewood, and flowers as an ornamental ingredient.^[3] Leaves, seeds, pods and flowers of *S. grandiflora* are edible. Flowers are mostly used as vegetables.^[4]

It is widely used in Ayurveda for treating diseases and the whole plant is used in the preparation of various formulations in Rasashastra like Grahani kapata rasa, Ratnagiri rasa and Pittakasantaka rasa.^[5] It is used for its astringent, anthelmintic, anxiolytic, anticonvulsive and

febrifugal activities. It is used for night blindness, headache, fever and rhinitis.^[2] The plant parts contain various bioactive compounds with medicinal properties that can cure many diseases and ailments such as antioxidant, hepatoprotective, wound healing, antiulcer, antibacterial, anti-inflammatory, anti-tuberculosis, antidiabetic, immunomodulatory, and antiproliferative effects.^[6] Besides the phytonutrients are used as a remedy for various diseases like bruises, dysentery, eye infections, smallpox, sores, sore throat, stomatitis inflammation, rheumatism, fever, nasal catarrh, ophthalmia, bronchitis, anaemia, headache, gout, and leprosy.^[7] Leaves of *Sesbania grandiflora* are useful in thrombosis, diarrhea, and inflammatory diseases and against a couple of significant bacterial pathogens. The juice of the leaves of *S. grandiflora* has been purportedly utilized in treating bronchitis, cough, vomiting, wounds, ulcers, diarrhea, and dysentery. The flowers have revealed antimicrobial activity. Powdered roots of this plant are mixed in water and applied externally as a poultice or rub for rheumatic swelling.^[10]

Study area: Odisha is located in the east of India and is bordered by West Bengal in the northeast, Jharkhand to the north, Chhattisgarh to the west and northwest and Andhra Pradesh to the south. Bargarh district is situated in the Western part of Odisha and is one of 30 districts of the state. It lies between 20° 43' to 20° 41' North latitude and 82° 39' to 83° 58' East longitude. The total geographical area of the district is 5837 sq km. in contrast, the total forest coverage is 269.33, which is about 4.61% of the total area. The forest predominantly consists of tropical dry deciduous types. The total

population in the district is 14, 81, 255, whereas the tribal population is 2, 81,135 (Census, 2011). The Sahara (Saora), Binjhal, Gond, and Kondh are the predominant tribal groups in the district. Tribal populations and other rural communities largely rely on agriculture, animal husbandry, and the farming of goats and poultry, as well as resources from the surrounding forests for their livelihoods.

Classification of *Sesbania grandiflora* (L.) Pers. (source: ITIS Database)^[11]

Kingdom: Plantae
 Subkingdom: Viridiplantae
 Infrakingdom: Streptophyta
 Super division: Embryophyta
 Division: Tracheophyta
 Subdivision: Spermatophytina
 Class: Magnoliopsida
 Superorder: Rosiflorae
 Order: Fabales
 Family: Fabaceae
 Genus: *Sesbania*
 Species: *Sesbania grandiflora* (L.) Pers

Brief description of the plant: It is a small tree up to 5-25 m tall. Leaves are 15–30 cm (6–12 in) long, with leaflets in 10–20 pairs or more and an odd one. Flowers are oblong, 1.5–10 cm (1–4 in) long in lax, with two to four flowers racemes. The calyx is campanulate and shallowly two-lipped. Pods are slender, mostly straight, sometimes falcata, and 30–45 cm (12–18 in) long, with a thick suture and approximately 30 seeds 8 mm (0.3 in) in size.

Distribution: There are about 60 species belonging to the genus *Sesbania* and mostly distributed in Africa, Australia, and Asia.^[12,13] It is native to Maritime Southeast Asia (Malaysia, Indonesia, Philippines, Brunei) to Northern Australia, and is cultivated in many parts of South India and Sri Lanka. In India, Agathi is abundant in many states, like Tamil Nadu, Andhra Pradesh, Kerala, Assam, Gujarat, and Bengal.^[4] Besides it is found in Odisha mostly in the garden of villagers.

MATERIALS AND METHODS

Sesbania grandiflora (Agasti) is a garden plant found in villages. The species has been identified with the standard flora books.^[14,15] The medicinal properties were collected from the experienced men and women and herbal medicine practitioners in the villages. These are cross-checked with some available scientific literature.^[16-22]

RESULTS AND DISCUSSION

The present study focused on documentation of *Sesbania grandiflora* used by the people of Bargarh District in Western Odisha. *Sesbania grandiflora* is a multifarious plant that has been worshipped as a sacred plant in some parts of the country including Odisha. This paper highlights the uses of different parts of the plant which

provide curative and preventive majors on various diseases and ailments such as cold, headache, night blindness, epilepsy, wound healing, indigestion, constipation, anthelmintic, skin tearing, colic pain, diarrhea, cough, arthritis, gout, smallpox, swelling pain, itching and high blood pressure. Besides, its tender leaves, flowers and young fruits are edible and used as vegetables.

Ethnobotanical observation

1. Leaf or flower extract (3 drops) is poured into the nostrils thrice daily to relieve cold and headache.
2. Leaf (5gm) is fried in cow's ghee and taken twice daily to cure night blindness.
3. Leaf (5gm) and Piper nigrum fruit (1 gm) are crushed with cow urine and filtered with a dry and clean cloth. The filtrate (3 drops) is inhaled thrice daily to get relief from epilepsy.
4. Leaf powder mixed with coconut oil or fresh leaf paste is applied twice daily to cure wounds.
5. Leaves and flowers are crushed together to extract the juice. The juice (1 teaspoon) is taken twice daily on empty stomach to cure indigestion and constipation. It is also useful in curing anthelmintic problems.
6. Butter prepared from the Buffalo milk curd and flowers of Agasti is applied over the affected part to cure skin tearing problems.
7. Bark extract (one teaspoon) of the plant with honey (half a teaspoon) is taken thrice daily to cure colic pain in the abdomen and diarrhea.
8. Bark extract (one teaspoon) of the plant with honey is taken thrice daily to cure cough.
9. Bark or root is crushed to paste and warmed slightly. It is applied regularly on the affected part to relieve pain due to arthritis and gout.
10. Bark paste is taken to relieve smallpox.
11. Equal amount of root bark of the plant and root of Datura metel are crushed together and the paste obtained is warmed slightly and applied on the affected part to cure swelling and pain.
12. A cloth is soaked in the root bark extract of the plant and it is wrapped over the vagina to cure leucorrhoea and itching.
13. Matured fruits are cooked and eaten to increase
14. Flower decoction is taken 1-2 times daily to control high blood pressure.
15. Both flowers and leaves are edible and used as vegetables, but people often prefer flowers over leaves.

CONCLUSION

Traditional knowledge of natural remedies is essential for the conservation of medicinal plants because such knowledge helps in developing strategies for sustainable management of plant resources.^[23] (Lira et al. 2009). The study provides information about the multifarious uses of the Agasti plant by the people of the Bargarh district in Western Odisha. All parts of this plant are utilized for the treatment of various types of ailments. Other than this, it

has the capability to fix atmospheric nitrogen and can be used as green manure to improve soil conditions. It is often planted in home gardens and used in traditional ceremonies and rituals. Although it is a popular food plant; people like its flowers as vegetables, now the plant has become rare in the study sites might be due to climatic change or the availability of diverse food substances in the society. Therefore, it is necessary to ensure the survival of the plant population by providing protection, conservation, multiplication and popularization of such medicinal plant species. It is widely recognized that much of the ethnobotanical knowledge concerning plants is at risk of extinction. Consequently, it is urgent to preserve and document this knowledge before it is lost forever.

ACKNOWLEDGEMENT

The authors are thankful and express their gratitude to the informants such as traditional herbal medicine practitioners and experienced men and women for sharing about the valuable medicinal and other uses of this plant species.

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