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Adhatoda vasica: An Overview of Its Traditional Medicinal Uses

Ranjan Kumar Dora[1*], Nikita Bhoi[1] , Dr. Anita Tripathy[2]

[1]*MSc Scholar, Rayagada Autonomous College, Rayagada, Odisha*

[2]*Lecturer in Lifesciences, Rayagada Autonomous College, Rayagada*

[*]*Ranjan Kumar Dora*

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Abstract

Medicinal plants have been used for centuries to treat various diseases in humans. One such plant is *Adhatoda vasica*, commonly known as Adosa. It belongs to the Acanthaceae family and grows in many regions of India and other parts of the world. Adosa is an important part of the Ayurvedic medical system. All parts of A. vasica—leaves, bark, root bark, fruit, and flowers—help eliminate intestinal parasites. People commonly use this herb to treat colds, coughs, and asthma. It is also significant in the traditional medicine of Southeast Asian indigenous cultures. A. vasica contains various chemicals, including alkaloids and flavonoids. It is known for its antiseptic, antimicrobial, anti-tuberculosis, anti-inflammatory, and abortion-inducing effects. The main alkaloids found in this plant include vasicine, vasicinone, vasicinol, adhatodine, adhatodinine, adhavasinone, and anisotine. This review explores the medicinal significance of A. vasica by examining existing research.

Keywords: *Adhatoda vasica*; Medicinal; Ayurvedic; Herb

1. Introduction

Plant diversity includes over 500,000 species and is crucial for the health of our planet. Plants help maintain environmental balance and support ecosystems. Herbal medicine, which dates back to around 1600 BC in ancient Greece, uses plants to treat illnesses and promote health. Recently, interest in medicinal herbs has increased globally, known as the Herbal Renaissance, as people seek traditional knowledge and natural remedies. In India, over 6,000 plant species—about 40% of the country's total—are used in healthcare, including formal systems like Ayurveda and local practices passed down through generations. This variety shows the important link between culture and natural resources, highlighting the need to protect plant diversity for our health and the environment.[1].

It is a small, evergreen shrub found in different parts of India and around the world. It has many uses in traditional Ayurveda. The Acanthaceae family is one of the largest groups of flowering plants, with over 200 genera and 2,000 species [2]. The plant has been utilised in Indian traditional medicine for over 2000 years and is commonly referred to as Adosa [3]. *Adhatoda vasica*, also known as 'Vasaka' in Ayurveda and 'Malabar nut' in English, is a small evergreen shrub. It grows across India, especially in sub-Himalayan regions, at elevations up to 1300 meters. You can also find it in Nepal, Pakistan, Myanmar, and Germany. For thousands of years, this plant has been used in

traditional medicine in India. People use it to treat bronchitis, tuberculosis, and various lung and bronchiole disorders. The World Health Organisation includes it in the "Manual of Traditional Medicine in Primary Health Care" because it helps with cough, asthma, breathing difficulties, phlegm, allergic conditions, and bleeding haemorrhoids [4].

2. Plant Description

Adhatoda vasica is a small evergreen shrub that usually grows about three meters tall. It has branches that grow opposite and upward. The leaves are broad, leathery, and can be 10 to 15 centimetres long and about 4 centimetres wide. They are fuzzy, light green on top, and darker green underneath. The leaves grow in pairs and are shaped like lanceheads, narrowing towards both ends. When dry, the leaves turn brownish-green, taste bitter, and smell like strong tea. The stem is soft and can be used to make charcoal. The plant produces large clusters of flowers at the ends of the branches. These flowers have attractive white petals with purple streaks on the lower lip. The fruit is a small capsule that has a channel running lengthwise and contains four round seeds [5]. *Adhatoda vasica* is an evergreen shrub found across the Indo-Malayan region. It grows from Punjab in the north to Bengal and Manipur in the southeast, and reaches as high as 1,350 meters in Travancore, Kerala. This plant is also present in Sri Lanka, Upper and Lower Myanmar, southern China, Laos, the Malay Peninsula, and the Indonesian Archipelago [6].

Adhatoda vasica is useful for treating respiratory problems. You can chew the plant's leaf buds with ginger roots to improve breathing. You can also find *Adhatoda vasica* in cough syrups, often mixed with Tulsi and ginger. The World Health Organisation includes it in its manual because of its traditional use in primary health care. In India, Vasaka is used in both traditional and modern healthcare systems, such as Ayurveda, Siddha, Unani, and folk medicine[7].

The roots, leaves, and flowers of this plant can help treat coughs, chronic bronchitis, rheumatism, asthma, and bronchial asthma. Many medicinal plants have health-boosting ingredients that also fight bacteria. The leaves and roots contain alkaloids that combine with Adhatoda acid. In Southeast Asia, leaf preparations treat bleeding, skin diseases, wounds, headaches, snake bites, and leprosy. In North India, yellow leaves relieve coughs and are used in cough syrups for their expectorant and anti-spasm properties [8].

The leaves of this plant reduce inflammation and treat skin issues. They support heart health and lower mucus thickness, helping with coughing and easing asthma symptoms [9].

3. Systematic Position

The systematic representation of the *Adhatoda vasica* plant [10,11]

- Kingdom: Plantae
- Division: Angiosperms
- Class: Eudicots
- Order: Lamiales
- Family: Acanthaceae
- Genus: Justicia
- Species: *Adhatoda* (*Adhatoda vasica*)

4. Plant Parts Used

Adhatoda vasica, also known as Malabar nut, is a valuable plant in Ayurvedic medicine. Different parts of the plant, including the leaves, roots, flowers, bark, stem, and fruit, are used for various health treatments. One common use of *Adhatoda vasica* is in cough syrup. It is often mixed with herbs like Ginger (*Zingiber officinale*) and Tulsi (*Ocimum sanctum*) to make it more effective in relieving coughs and improving overall health.

The leaf buds of *Adhatoda vasica* are especially helpful for clearing the airways. When used alone or with a small amount of ginger root, they can prepare the body for deep breathing exercises, which are important in yoga and respiratory therapy. In Southeast Asia, people use preparations made from the leaves of *Adhatoda vasica* to treat a variety of health issues. These include bleeding, skin diseases, wounds, headaches, and leprosy. Overall, *Adhatoda vasica* is an important part of traditional medicine, showing how plants can help with many health problems[12,13].

Adhatoda vasica is a well-known medicinal plant that many rural communities use for health issues. People use its roots to treat diabetes, coughs, and liver problems. In Southeast Asia, they prepare the root as a paste, powder, or decoction to help with serious illnesses like tuberculosis, diphtheria, and malaria, as well as conditions like leucorrhea and eye problems. The flowers of *Adhatoda vasica* also provide health benefits, especially for breathing problems. They can relieve colds, asthma, bronchitis, and fevers due to their ability to ease muscle tension and spasms.Furthermore, the fruit of this plant offers many health benefits. It helps treat colds and works similarly to the flowers in easing bronchitis, jaundice, diarrhoea, dysentery, and fever. It also acts as a mild laxative for digestive health. Overall, *Adhatoda vasica* is a versatile and valuable plant in herbal medicine[14].

5. Conclusion

Research shows that *Adhatoda vasica* has been widely studied for its health benefits and chemical properties. It plays an important role in herbal medicine. This plant is a key source of alkaloids like vasicine and vasicinone. This review highlights studies on its antibacterial, antifungal, liver-protective, cough-relieving, and anti-inflammatory properties. It also discusses its roles as an abortifacient, antiviral, and blood-clot-dissolving agent, as well as its benefits for heart health, blood sugar control, and antioxidant effects. The findings are summarised in the referenced review papers.

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Declaration of Conflicting Interests

No one has any conflict of interest.

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