

# Vasa (Adhatoda vasica)

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वासको वाशिका वासा भिषङ्गाता च सिंहिका ।

सिंहास्यो वाजिदन्ता स्यादाटरूषोऽटरूषकः ।

आटरूषो वृषस्ताम्रः सिंहपर्णश्च स स्मृतः ॥७७॥

वासको वातकृत्स्वर्यः कफपित्तास्रनाशनः ।

तिक्तस्तुवरको हृद्यो लघुशीतस्तृडर्तिहृत् ।

श्वसकासज्वरच्छर्दिमेहकुष्ठक्षयापहः ॥७८॥

भावप्रकाश गुडूच्यादिवर्गः ७७-७८



## What the Shlok Says

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As mentioned in Bhavprakash, the Sanskrit synonyms of Vasa are:

Synonyms of Vasa - Vasako, Vasika, Vasa, Bhishangmata, Sinhika, Sinhasya, Vajidanta, Atarush, Atarushaka, Vrushtamra, Sinhaparna.

Some of the interesting synonyms are explained below -

Vasika = Swarya, Swasanivarnartha -Vasica or vasa can mean “good for voice” or “one that relieves breathlessness”

Atarush - One that stops the spread of diseases in the body.

### **Qualities of Vasa –**

Vasa increases vaat dosha. It has swarya (good for voice) property. It reduces kapha and pitta dosha. It detoxifies the blood of its toxins. It is tikta and kashay in taste. It has a protective action on heart. Properties of Vasa are laghu, sheeta. It is helpful in treatment of Asthma, Cough, Fever, Emesis, Diabetes, Skin disorders and TB.

### **Properties:**

Rasa: Tikta, Kashay

Guna: Laghu

Virya: Sheeta

Vipaka: Katu

Karma: Hridya, Kaphapittahara, Raktasangrahika, Kasaghna

**Formulations of Vasa** – Vasavaleha, Vasakasava, Vasa Swaras, Vasadi kwath

**Therapeutic uses** - Swasa, Kamala, Kasa, Kshaya, Kustha, Prameha, Raktapitta

### **DOSE** –

10-20 ml of the juice of fresh leaves

10-20 g of the dried drug for decoction

### **Active ingredient - Vasicine**

The phytochemical analysis show that phenols, tannins, alkaloids, anthraquinone, saponins, flavonoids and reducing sugars were found in the leaves of Vasa. But the pharmacologically most studied chemical component is bitter quinazoline alkaloid, vasicine which is present in the leaves, roots and flowers. Vasicine is found to have the pharmacological properties like - bronchodilator activity, expectorant, respiratory stimulant activity, moderate hypotensive activity and uterotonic.

## **What does it mean in modern scientific days?**

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### **Anti-tuberculous activity ( Kshaya)**

वासायां विद्यमानायां आशायां जीवितस्य च ।

रक्तपित्ती क्षयी कासी किमर्थमवसीदति ॥

-वैद्यजीवन

A study was conducted to evaluate the activity of semi-synthetic derivatives of vasicine (bromhexine and ambroxol ) against Mycobacterium tuberculosis in vitro. It was found that the semisynthetic derivatives, bromhexine and ambroxol have a pH-dependent growth-inhibitory effect on Mycobacterium tuberculosis. Both the compounds were found to be concentrated in the macrophages, therefore it was suspected that they might exert a clinically useful effect on intracellular tubercle bacilli. This, combined with indirect effects including enhancement of lysozyme levels in bronchial secretions and levels of rifampicin in lung tissue and sputum, and possibly clearance of bacilli-laden mucus from cavities and bronchi, suggested a potentially

useful adjunctive function for these agents in the therapy of tuberculosis, and added credibility to early reports of the beneficial effect of benzylamines in this disease.

This study concluded that both the derivative compounds of vasicine have highly effective anti-tubercular activity. In today's world of MDR and XDR TB this might be a breakthrough to an alternative and effective treatment of the disease.

### **The antitussive activity (Kasa) and bronchodilator effect (Swasa)**

*Adhatoda vasica* (AV) extract was evaluated in anaesthetized guinea pigs and rabbits and in unanaesthetized guinea pigs. *A. vasica* was shown to have a good antitussive activity. Intravenously, it was 1/20–1/40 as active as codeine on mechanically and electrically induced coughing in rabbits and guinea-pigs. After oral administration to the guinea-pig the antitussive activity of AV was similar to codeine against coughing induced by irritant aerosols. The alkaloids, vasicine and vasicinone in the leaves, possess respiratory stimulant activity (Baquar, 1997). Vasicine, at low concentrations had bronchodilation and relaxation effect on the tracheal muscle. However, at high concentrations, vasicine presented a significant protection against histamine-induced bronchospasm in guinea pigs.

### **Antidiabetic (Prameha)**

To study the effects of traditional herbs on diabetes, extracts of a range of traditional herbs was used to test the levels of the compound  $\alpha$ -glucosidase in rat's intestine. Methanolic extracts from the medicinal parts of 40 traditional herbs were tested in this screening experiment. The methanolic extract from the leaves of *Adhatoda vasica* Nees (Acanthaceae) showed the highest sucrase inhibitory activity with sucrose as a substrate. The alkaloids, vasicine and vasicinol inhibited sucrase activity, with an IC<sub>50</sub> value of 125  $\mu$ M and 250  $\mu$ M respectively. Though, the alkaloids did not show inhibitory effects (IC<sub>50</sub> > 1 mM) on intestinal maltase, isomaltase and -amylase. Thus, *A. vasica* can be explored as a natural antidiabetic agent.

## You may find this interesting:

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- ❖ An up-to-date data on phytochemical compositions and pharmacological properties of different parts of *Adhatoda vasica* are reviewed and commented in this article. The

Natural Products Journal, 2011, Bentham Science Publishers Ltd. **Adhatoda vasica**  
**Nees: Phytochemical and Pharmacological Profile.**  
<http://www.ingentaconnect.com/content/ben/npj/2011/00000001/00000001/art00004>

❖ Free full text article on studies related to Adhatoda vasica are available at Hindwai Publishing Corporation. Here is the link:

<http://www.hindawi.com/search/all/adhatoda+vasica/>

### References:

1. The Ayurvedic Pharmacopoeia of India part-I volume – I, Vasa -Adhatoda vaica Nees pg.122
  2. John M Grange and Noel J.C. Snell, Activity of bromhexine and ambroxol, semi-synthetic derivatives of vasicine from the Indian shrub Adhatoda vasica, against Mycobacterium tuberculosis in vitro, Journal of Ethnopharmacology; Volume 50, Issue 1, January 1996, Pg - 49-53.
  3. 2. Jayant N Dhuley, Antitussive effectof Adhatoda vasica extract on mechanical or chemical stimulation - induced coughing in animals, Journal of Ethnopharmacology ; Volume 67, Issue 3, November 1999, Pg - 361 – 365.
  4. Hong Gao et al, Inhibitory effect on  $\alpha$ -glucosidase by Adhatoda vasica Nees, Food Chemistry; Vol 108, Issue 3, Jun 2008, Pg - 965 – 972.
  5. Lone SA, Yadav A, Sharma AK, Tafazul M, Raghuwanshi. YaD. A review on Adhatoda vasica Nees - An important and high demanded medicinal plant. [www.scopemed.org/?mno=155142](http://www.scopemed.org/?mno=155142)
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