

# Shatavari, Jastimadhu and Aswagandha the Ayurvedic Therapy

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## SHATAVARI

Shatavari is a perennial much branched climbing herb found all over India, especially in tropical and sub-tropical parts and in Himalayan region upto 1400 m. elevation. It is also cultivated. The fleshy root of shatavari has been used as one of the most powerful nutritive and spermatogenic herb in Ayurvedic system of medicine.

Botanical Name : *Asparagus racemosus*

Family : (Liliaceae (Rasona-kula))

Vernacular Names :

Oriya :	Shatabari
Hindi :	Satavar
Bengali :	Shatamooli
Marathi :	Shatavari
Gujarati :	Shatawari
Telugu :	Challan gadda
Tamil :	Sadawari
Kannada :	Majjigegade

**Plant Description :** Shatavari (*Asparagus racemosus*) is an armed climbing undershrub with woody terete stems and recurved and rarely straight spines. Young stems very delicate, brittle and smooth; leaves reduced to minute chaffy scales

and spines; cladodes triquetrous, curved in tufts or 2-6. Flowers are white, fragrant in fascicles or racemes on the naked nodes of the main shoots or in the axils of the thorns. Fruits subglobose pulpy berries, purplish black when ripe. Seeds 3-6, globose, or angled having brittle and hard testa. The tuberous succulent roots are 30 cms to a metre or more in length, fascicled at the stem base, smooth tapering at both ends.

### Parts used : Fleshy roots

**Chemical Constituents :** Root contains saponin, water soluble constituents 52.1/2%, moisture 1%, glucose 7% and ash from dried root 4%.

**Medicinal Value (properties and uses) :** The roots of *Asparagus racemosus* (Shatavari) are fleshy, whitish-brown in colour, slightly sweet in taste, emollient, cooling, nervine tonic and possesses rejuvenating, carminative and aphrodisiac properties. Different scientific studies have proved its efficacy in a number of physical and mental ailments.

The root *Asparagus racemosus* (Shatavari) also has proved its effectiveness as a natural sex-stimulant and spermatogenic medicine in both male and female sexual and gynecological disorders. The root is important for increasing the seminal qualities due to its ability to increase sperm count as well as improves its motility. This herb also

enhances libido due to its general tonic effects. *Asparagus racemosus* additionally possesses anti-anxiety and anti-stress properties which are of vital in the infertile male.

Shatavari (*Asparagus racemosus*) root and their different extracts have shown alterative, demulcent, aphrodisiac, antiseptic and anti-cancer activity. It also acts as a nutritive tonic. Shatavari also contains a saponin glycoside that exhibits antioxytotic activity. It is a good source of folic acid, that is vital for foetal neuronal growth and blood formation.

#### **Therapeutic Uses :**

The roots of *asparagus racemosus* (Shatavari) has been used for ages in Ayurvedic medicine and other traditional medicines as follows :

- In the treatment of general debility, male infertility (due to low sperm count), loss of libido, epilepsy (fits), mental debility and in many male diseases.
- In case of female oriented ailments such as menopausal syndrome, anaemia, lower quantity of breast milk secretion, and for both mental and physical ailments, the roots of *Asparagus racemosus* has been proved its medicinal efficacy.

Above all, the root of *Asparagus racemosus* (Shatavari) is a well-known nutritive, aphrodisiac, astringent medicine for all age groups having no side effects or any contra-indication.

**Doses :** The root powder : 10-15 gms, per day

The root decoction 10-15 ml. per day.

#### **JASTIMADHU**

Jastimadhu, botanically named as "*Glycyrrhiza glabra*" is a genus of perennial herbs and undershrubs distributed in the sub-tropical

and warm temperate regions of the world. The root of the said herb has been used in India since time immemorial. The root of the said herb is also known as Jastimadhu in Sanskrit / Ayurveda, Mulethi in Hindi and liquorice in English. Root (Liquorice) possesses a wide range of medicinal properties and also amazingly sweet in taste, which is its unique feature.

**Chemical Constituents :** The principal constituent of liquorice root is - glycyrrhizin. Root contains 3.6% glycyrrhizin, a yellow amorphous powder-asparagine, a glycoside isoliquirtin 2.2%, glucose 3.8%, starch, gum, mucilage, amorphous, sulphuric acid and metallic acids, calcium and manganese salts.

**Medicinal Value (Properties and Uses) :** Liquorice is one of the most popular medicinal herbs in India and also in abroad. The root of *Glycyrrhiza glabra* (liquorice) contains a substance called glycyrrhizin which is 50 times sweeter than sugar. Sugar, as we know it today, is a relatively new development 400 years ago, the only sweet tastes came from fruit and honey. The extreme sweetness of liquorice (Jastimadhu) made it a real oddity and people loved it. Due to its peculiar sweetness, liquorice was used in many medicines to mask the unpleasant taste of the other ingredients. This is a still common practice in India today and many parts of the world.

Liquorice is also very popular in China. The Chinese consider it to be demulcent, emollient, expectorant and useful in cough and chest afflictions. In the chest department it is used to treat coughs, laryngitis, sore throat, bronchitis and chronic bronchitis. Liquorice also possesses anti-inflammatory properties. In fact liquorice anti-inflammatory abilities are so strong that they are used to heal all manner of irritated tissue be they inside or outside the body. The action is very much like that of a steroid such as cortisone. The good

news with this steroid-like actions that it does not come packing the immuno-suppressing side effects of chemically synthesized steroids. People who are attempting to get the steroid may often used liquorice to help in their bodies off the drugs. Ayurvedic literature describes liquorice as a Rasayana (Rejuvenating) herbs.

#### **Effects on Reproductive System :**

Male reproductive system consists of eight sex related organs, viz testes, epididymides, deferent ducts, seminal vesicles, ejaculatory ducts, prostate gland, penis and urethra. These organs help in maintaining a good sexual life and also associates in fertilization process with the sex partner. Various herbs put a remarkable effect on this system. Liquorice root (Jastimadhu) is considered as one of the best herbal medicines in this regard.

Liquorice root improves sperm count as well as semen viscosity like curculigo orchidies. Additionally minimizes the inflammation and irritation of the urethra which can be consequence of coitus. Liquorice root also heals promptly any minor injuries which may have occurred during forceful intercourse. Liquorice root also possesses a cooling and demulcent effect on the genitourinary system which helps in the after orgasm phase.

**Herbal Anti-Oxidant :** The antioxidant properties present in the liquorice root checks cholesterol build-up in arteries that contributes to arteriosclerosis by delaying oxidation and by making density lipoprotein more resistant to oxidation process.

**Effects on Digestive System :** For relieving pain and discomfort caused by acrid matter in the stomach, it is wonderful. It seems to remove the irritating effects of acids in a better way than alkalies, it is used as a mild laxative.

Liquorice also has mild anti-inflammatory and mineralo / corticoid properties. Deglycyrrhizinated liquorice has reduced minor corticoid activity. It is used in the treatment of peptic ulcer. Liquorice root also has demulcent and anti-inflammatory action. These compounds help to heal the amaeobic ulcer in our study.

**Toxicity and Contra-indication :** The U.S. Food and Drug administration has rated liquorice (Jastimadhu) "Generally recognized as safe" So, one can use as much soothing liquorice tea as desired.

#### **INDIAN GINSENG : ASHWAGANDHA :**

*Withania somnifera*, also called Ashwagandha, is an erect, evergreen, tomentose shrub, 30-150 cm high, found in dry parts of India, in waste places and on bunds. As the roots have various medicinal properties Ashwagandha is also cultivated in north-western states viz., Rajasthan, Gujarat, Madhya Pradesh, Maharastra and in Uttar Pradesh.

Ashwagandha roots are stout, fleshy and whitish brown; the leaves are simple ovate, glabrous, those in the floral region smaller and opposite; the flowers are inconspicuous, greenish or loid-yellow, in axillary, umbrallate cymes; berries are small, globose, orange-red when mature, enclosed in the persistent calyx; the seeds are yellow and reniform.

#### **Parts used : Roots and leaves**

**Properties and uses :** Ashwagandha has been used for over 2,500 years before the birth of Buddhism, Yoga and Christianity in India, as a healing herb in a number of forms to treat a huge variety of physical maladies. Today after thousand of years of continuous use Ashwagandha is still regarded as one of the most valuable medicinal herbs.

Often referred to as "Indian Ginseng" Ashwagandha is prescribed in case of debility where it is reported to promote strength, vigour and vitality and acts as nature's best adaptogen (an adaptogen fortifies the immune system, protects against mental and physical fatigue, fights stress, tension and normalizes all body functions.) The roots and leaves of the plant are used traditionally in the form of powder, decoction, oil and poultice etc. These have been used in folk medicine against general debility, hypertension, inflammations, asthma, cancer, tuberculosis, tumors, rheumatism, psoriasis, senility, smallpox, sores, syphilis, scabies, ringworm, typhoid, uterosis and wounds.

After long use in India, Ashwagandha has been introduced to the West and has enjoyed a very enthusiastic reception among the scientific community. Its use has been mentioned as an immuno-modulator, alterative, astringent, nervine sedative, aphrodisiac, adaptogen, amaebicide and health restorative tonic etc. Ashwagandha prevents or cures everything from minor cough to deadly cancer, it no doubt has impressive adaptogenic properties. With a programme of good nutrition, it can boost both immunity and endurance.

**Chemical Constituents :** The diverse pharmacological activities of this plant are due to its alkaloids and withanolides. Ashwagandha has been accurately termed as "adaptogen" an agent that causes adaptive reactions. Ashwagandha root contains 13 types of alkaloids including cusehygrine, anahgrine, tropin, anaferin, withasomine, visamine, withanone and withaferin. The total alkaloids possess relaxant on smooth muscles of blood vessels by musculo-tropic action. It has also tonic, astringent, aphrodisiac and nervine sedative properties. Besides these alkaloids, root of Ashwagandha also contains an

essential oil. Withaniol  $C_{25}H_{35}O_5$ , glycoside, starch, glucose and amino-acids.

#### **Pharmacological Studies :**

##### **Sex-stimulant activity :**

1. Regular consumption of withania somnifera root powder enhances the sexual power especially in elderly males. This is due to sex-stimulant and rejuvenating action of withania somnifera.<sup>1</sup>
2. Ashwagandha is especially recommended for infertility in males due to its beneficial effects on semen characteristics.<sup>2</sup> Sperm mortality increased by withania somnifera.
3. Is useful for premature ejaculation since it influences spermatorrhea. Withania somnifera additionally possesses a sedative effect and thereby helps to avoid over excitement.
4. Infuses fresh energy and vigour in the system worn out due to disease or ageing. Reduces levels of mental fatigue, so that a harmonious sexual relationship of possible.
5. Is an aphrodisiac with special beneficial effects for loss of energy, as in premature ejaculation which may be concomitantly present.

##### **Immuno-modulatory activity :**

1. Ashwagandha (withania somnifera) provides the active ingredient withanolide and withaferin which affect the T&B Lymphocytes, as assessed by local xenogeneic ageing phenomenon and improve endurance levels in experimental subjects.
2. Possesses an immuno-modulatory effect, which is vital for those cases having sperm antibodies.

##### **Antioxidant activity :**

1. The effect of Ashwagandha root was evaluated for lipid peroxidation in stress. The herb

was found to have a very good anti-oxidant activity, which may in part explain the anti-stress, congestion facilitating, anti-inflammatory and anti-ageing effects of this herb.

#### **Antiageing effect :**

*Withania somnifera* (Aswagandha) promotes growth especially during active growth period, probably by enhancing biosynthesis of tissue components with or without the release of growth hormones. It also causes stimulation of appetite leading to enhanced food intake. It may be reducing metabolic rate by its depressive action leading to diminished calorie utilization or by lowering body temperature by 1.5C<sup>0</sup> which indicates a lower metabolic rate. It shows an increase in haemoglobin count, causes the development of black pigment in the hair and decreases calcium in nail. It causes reduction in serum cholesterol and erythrocyte sedimentation. It lowers blood pressure and strengthens heart. It is an immuno suppressive agent and thus helps inflammation of joints and prevents the connective tissue damage (rheumatic and arthritic pains). It contains amino acid arginine and steroidal principles, due to which it has an aphrodisiac effect.

N.B : For the above purposes only Ashwagandha "nagori" should be used and not the root obtained from wild plant.

#### **Herbal Anabolic Agent**

It is said to impart the power of a horse to human body by its rasayana (rejuvenating) effect. For gaining weight boil 20 gm Ashwagandha root powder in one litre of milk, till a thick slurry is formed, add Mishri and drink it in the morning. For additional benefit and if digestion is good, and one teaspoonful of ghee to the milk is extremely beneficial.

#### **Anti-cancer activity**

(a) The second largest cause of mortality all over the world is carcinom e.g. cancer. The combination of surgery, radio-therapy though helps in the treatment of cancer, is not without side effects. Ancient classical medical literature of Ayurveda describes in detail "Gumma Roga" a synonym of cancer and suggest remedies. The foremost among them is "Shwagandha" i.e *withania somnifera* root, which is an anti-tumour, immunomodulant and adaptogenic drug. Extensive in vitro and in vivo studies have proven the efficacy of Ashwagandha and its effects as an adjuvant to Radiotherapy.

(b) A chemical extracted from the roots of this plant used intensively in traditional Ayurvedic medicine has shown anti-cancer properties, raising hope of better cure rates for cancers. The root extract of the plant, *withania somnifera*, known as "Ashwagandha" in India kills tumour cells on its own and in combination with modern cancer therapy, researchers announced at a scientific meeting here. When the plant extract is combined with conventional radiotherapy, there is a powerful synergistic effect that gives better result than radio-therapy alone. Scientists from Kasturaba Medical College, Manipal said at the annual meeting of the Indian Society of Nuclear Medicine.

(c) Daily intake of Ashwagandha root powder (3-6 gm) helps in cancer by arresting the growth of fast dividing cells, provides protection to cells against cancers, lessens the deleterious effects of various chemicals and rays during chemotherapy and radiation therapy. The administration of Ashwagandha root powder to cancer patients prevented the decrease in the body weight of the patients.

### Clinical Studies :

1. The glucosides of withania somnifera exhibited significant antistress activity in albino rats. (Bhattacharya et al 1987)
2. The sitoinsides exhibited significant immunomodulatory and central nervous stimulant effects inclusive of anti-stress activity, augmented learning and memory in animals (Ghosh et al 1989).
3. The antianxiety efficacy of this drug in patients with anxiety neurosis reported by Singh and Malaviya (1978).
4. A double blind study in malnourished 4558 children was conducted with proven weight gain and improvement in I.Q. (Sesadri and Sudarshan).
5. Ashwagandha Rasayana (Withania somnifera powder processed seven times in decoction of the same plant) was administered for eight weeks at a dose of 3 gm. twice a day with water effective in keratitis and prevents fall of hair growth (O.P. Gupta et al 1995).

### Toxicity and Contraindication :

No known toxicity or side effects; used in India for over 2, 500 years. It has been used as a

key ingredient in many Ayurvedic medicines such as "Ashwagandharista" (nervin tonic, recommended for nervous weakness, anxiety neurosis, epilepsy, sleeplessness and for general debility), "Ashwagandhadi Churna", "Ashwagandhavaleha" etc.

### References :

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*Hon'ble Chief Minister  
Shri Naveen Patnaik going round the  
Photo Exhibition along with  
Shri Biswabhusan Harichandan,  
Minister, Rural Development,  
Industries and Law and Shri Debasis  
Nayak, Minister, Information &  
Public Relations, Sports and Youth  
Services at the Celebration of 150th  
anniversary of 1st war of  
Independence and 190th Year of  
Khurda Paika Mutiny at  
Bhubaneswar on 8.2.2008.*