Vedic Medicines with Special Reference to Rauwolfia Serpentina

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ABSTRACT

Ayurvedic medicine is a Hindu system of traditional medicine native to India and a form of alternative medicine. The earliest literature on Indian medical practice appeared during the Vedic period in India. The Āyurveda and the Charaka Samhita Ancient India Herbal medicine date back several thousand years to the Rig-Veda, the collection of Hindu sacred verses. This is the basis of a health care system known as Ayurvedic medicine. One useful plant that has come from Ayurvedic tradition is snakeroot, Rauwolfia serpentina, because the roots resembled the shape of snakes. Rauwolfia serpentina contains a variety of compounds with antioxidant capacity and other health benefits like treatment of diabetes, cardiovascular disease, cancer, mental illness and hypertension, schizophrenia, gastrointestinal diseases, circulatory disorders, pneumonia, fever, malaria, asthma, skin disease, scabies, eye diseases, spleen diseases, AIDS, rheumatism, body pain, veterinary diseases etc. this plant is also being used to prepare fermented food products. It has been stated that this plant is used as antidote against snakebite. The antibacterial and antifungal activities were high in petroleum ether and acetone extract of rauwolfia serpentina.

Keywords: Sarpagandha, Reserpine, Ayurvedic medicine, Alkaloids, Ethno medicine

INTRODUCTION

Rauwolfia serpentina or Sarpagandha plant, snake root plant, devil pepper is widely used medicinally both in the Modern Western Medical system and also in Ayurveda, Unani and folk medicine. Sarpagandha is an important medicinal plant distributed in the foot-hills of Himalayan range, up to the elevation of 1300-1400 m. and almost all over the country. In all state of Rajasthan plant distributed naturally but mostly in Udaipur, Kota and Chittorgarh. It has been used for centuries for the relief of various central nervous system disorders. The root of this plant has been used in the treatment of hypertension or as a sedative and tranquillizing agent. Its indiscriminate uprooting from wild source, have put ban to the export of this drug by government of India. In India and Nepal; it is a common treatment for hypertension and insomnia. Hindus used this plant for centuries as a febrifuge and as an antidote to the bites of poisonous reptiles like snakes. Rauwolfia serpentina is an evergreen, perennial, glabrous and erect undershrub. The maximum height of the plant is up to 60 cm. Its roots are tuberous with pale brown cork. The Leaves of the plant are bright green above and below pale green and thin its flowers are in irregular corymbose cymes, white, often tinged with violet. The flowering time is from March to May in Indian conditions. Its fruits are Drupe, single or didymous, shining black, the inflorescence with red pedicels and calyx and white corolla. Roots greenish-yellow externally and pale-yellow inside, its diameter at the thickest portion varies from 1.2 to 2.5 cm. The root-bark constitutes 40-60% of the whole root and about 90% of alkaloids. The fresh roots emit a characteristic acrid aroma and are very bitter in taste.

LCULTIVATION

Land Preparation
The plant requires slightly acidic to neutral soils for good growth with medium to deep well drained fertile soils.

Planting
The crop can be propagated by cutting, stem cuttings, seed, root stumps.
II. CHEMICAL CONSTITUENTS

The major alkaloid present in root, stem and leaves of the plant is Reserpine varies from 1.7 to 3.0 %. The root barks has more than 90% of the total alkaloids in roots. The root contains ophioxylin, resin, starch and wax.

The minor alkaloids present in the plant are Ajmaline, Ajmalinine, Rauwolfine, Reserpinine, Sarpagine, and Serpentine. Indian medicinal plant (*Rauwolfia serpentina*) analyzed for its chemical composition, vitamins and minerals. This herb is a good source of minerals such as Ca, P, K, Mg, Na, Fe and Zn. The importance of these chemical constituents is discussed with respect to the role of these herbs in ethno medicine in India. Alkaloids are very important in medicine and constitute most of the valuable drugs.

**Reserpine**

Reserpine content were analysed by HPLC using methanol extracts and was reported that the Reserpine content varies with different geographical location. Reserpine is an indole alkaloid and is detected, monitoreed and quantified by HPTLC. Reserpine is an Indole alkaloid chemically it is (3β, 16β, 17α, 18β, 20α) – 11, 17 – dimethoxy – 18 [(3, 4, 5 trimethoxybenzoyl) – oxyl] yohimban – 16 – carboxylic acid methyl ester or 3, 4, 5 –trimethoxybenzoyl methyl reserpate2, used in lowering blood pressure7-8, as tranquilizer7-8 etc.

![Chemical structure of reserpine compound found in *R. serpentina*](image)

Reserpine (C33H40N2O9)[**Systematic (IUPAC) name:** methyl-11, 17α-dimethoxy-18β-{(3,4,5-trimethoxybenzoyl)}]

**Fig.** Chemical structure of reserpine compound found in *R. serpentina*

**Yield**

On an average, root yield vary from 15 to 25 q/ha of dry weight under irrigation depending upon soil fertility, crop stand and management

**Scientific Description**

**Kingdom:** Planate

**Division:** Magnoliophyta

**Class:** Magnoliopsida

**Order:** Gentianales

**Family:** Apocynaceae

**Genus:** Rauwolfia

**Species:** *R. serpentine*

**Common Name**

- Hindi: Chandrabhaga, Chota-chand, Sarpagandha
- English: *Rauwolfia* / Indian snakeroot
- Latin: *Rauwolfia serpentine*
- Sanskrit: Sarpaghandha
- Tamil: Chevanamalpodi, Sarpagandha
- Kannada: Keramaddinagaddi
- Telugu: Patalaguni, Patalagandha, Sarpagandha
- Malayalam: Churannavilpori, Suvapavalporiyam.
- Marathi: Harkaya, Harki, Hadaki/Adakai
- Assamese: Arachoritita
- Bengali: Chandra
- Kannada: Sutranabhi
III. SERPENTINA AS MEDICINAL HERBS

Ayurvedic treatments rely heavily on herbs and other plants—including oils and common spices. Currently, more than 600 herbal formulas and 250 single plant drugs are included in the “pharmacy” of Ayurvedic treatments. Historically, Ayurvedic medicine has grouped plant compounds into categories according to their effects (for example, healing, promoting vitality, or relieving pain). The compounds are described in texts issued by national medical agencies in India. Sometimes, botanicals are mixed with metals or other naturally occurring substances to make formulas prepared according to specific Ayurvedic text procedures; such preparations involve several herbs and herbal extracts and precise heat treatment.

Some of the medicinal plants that we find in India are Tulsi (Ocimum sanctum), Haridra (Curcuma longa), Sarpagandha (Rauwolfia serpentina), and Ghritkumari (Aloe barbadensis). Guggulu (Commiphora wightii), Brahmi (Bacopa monnieri), Aswagandha (Withania somnifera) and Amla (Emblica officinalis) etc.

One useful plant that has come from Ayurvedic tradition is snakeroot, Rauwolfia serpentina, because the roots resembled the shape of snakes. The roots of Rauwolfia are generally used in medicine. Rauwolfia is mainly used for the treatment of various central nervous system disorders associated with psychosis, schizophrenia, insanity, insomnia, and epilepsy.

High Blood Pressure: The Rauwolfia herb is the best remedy for high blood pressure and it has been adapted by medical fraternity in most countries. Half a teaspoon of its powder taken thrice a day is effective in relieving hypertension.

In Insanity: The Rauwolfia plant is highly beneficial in treating insanity. One gram of powdered root can be taken twice a day with 250 ml of goat’s milk, sweetened with sugar candy. It is unsuitable for those with a low blood pressure, depressed and hypotensive patients.

In Insomnia: Rauwolfia is a well-known remedy in treating insomnia because of its sedative properties. About 0.6 to 1.25 grams of the powder of its root is mixed with some scented vehicle and taken. It is non-stimulating and should be given in doses of 0.25 grams to the patient at bedtime for sound sleep.

In Hysteria: Rauwolfia is useful in treating hysteria. One gram of powdered root can be administered thrice with milk. Treatment should be continued till a complete cure is obtained.

Other uses: It is used as an antidote to the bites of poisonous reptile like snakes and other painful affections of the intestinal canal.

- It is also useful for in the treatment of cataract, because the juice of the leaves has been used as a remedy for capacity of the cornea.
- It also cures plague and fever.
- Sarpagandha is used for the treatment of Schizophrenia.
- It is used in different countries as a sedative and tranquilizer.
- Rauwolfia serpentina is believed to cure anxiety, psychosis and epilepsy.
- It is also quoted for the treatment of colic and cholera.
- It is useful some gynecological problems like frigidity and molimina. The root is believed to stimulate uterine contraction for expulsion of foetus for the difficult childbirth.
- It is used to treat painful affections of bowels.
- It relieves in skin disorder such as itching (hives/urticaria), psoriasis, excessive sweating.
- It is used in various part of the world for the treatment of snake (cobra), scorpion or reptile bite and stings of any poisonous insects.
- The mixture of this with ginger and black pepper regularizes menstruation.
- The extract is also used against diarrhea and dysentery since ages.
- It is used in the treatment of hypochondria, mental disorder and a certain form of insanity.
- It is also used against irregular heart action in old ages.
- Sarpagandha also cures toxic goiter.
- It is balance Vata and Pitta in the body.
- Sarpagandha is used for rheumatism, edema and intestinal diseases.
- It is useful in against constipation and dizziness.

IV. REFERENCES

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