



Review on medicinal properties of *Chlorophytum borivilianum* and *Asparagus racemosus*

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Introduction : Herbal medicines are essential components of traditional medicine in several countries including China and India. India has a well-established



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system of medicine known as Ayurveda. This system of medicine utilizes plants and minerals for the welfare of human beings. India is a hot-spot of mega-biodiversity of medicinal plants/herbal drugs which have been used for curative purposes.

As treated very broadly, the Liliaceae are mostly perennial herbs from starchy rhizomes, corms, or bulbs comprising about 280 genera and 4,000 species. The leaves are alternate or less often opposite or whorled. The flowers are often showy and are nearly always bisexual and actinomorphic. The perianth typically consists of two whorls of undifferentiated or weakly differentiated petaloid tepals with 3 distinct members in each whorl, or less frequently all of the segments are connate into a common perianth tube or perigynous or epigynous zone that sometimes has an adnate corona. The androecium usually consists of 6 fertile stamens attached to the receptacle or adnate to the perianth tube but rarely 3, 4, or up to 12 may be found. The gynoecium typically consists of a single compound pistil of 3 carpels, a single style commonly with 3 stigmas, and a superior or less often inferior ovary with 3 locules, each containing several to numerous axile ovules. Rarely there are 2 or 4 carpels and locules with axile placentation or only a single locule with intruded parietal placentation. The fruit is nearly always a capsule or berry.

Among different herbal drugs, preparations based on *Chlorophytum borivilianum* and *Asparagus racemosus* L have their own importance in India and other countries of the world as well. The genus *Chlorophytum borivilianum* and *Asparagus racemosus* L. belonging to the family Liliaceae is widely distributed in the pantropical regions. There are almost 215 species that have been reported in the genus *Chlorophytum borivilianum*. They are perennial rhizomatous herbs. Rhizomes are often short and inconspicuous while roots are usually thicker or slightly fleshy.



They are mainly cultivated for their ornamental flowers. Traditionally, roots of these species are reputed to possess various pharmacological utilities having saponins as one of the important phytochemical constituents.

Chlorophytum borivilianum or Safed Musli : *Chlorophytum borivilianum* family Liliaceae is a traditional rare Indian medicinal herb widely used in the treatment of many clinical conditions in India. It is an important drug commonly known as 'Safed Musli'. It has many therapeutic applications in Ayurvedic, Unani, Homeopathic and Allopathic system of medicine. In the Ayurvedic literature, Safed Musli is celebrated as a Divya Aushad with unparalleled medicinal properties. It is a chief ingredient in the preparation of over a hundred Ayurvedic formulations. *Chlorophytum borivilianum* is widely cultivated throughout India. Major phytochemical components reported from the roots of *C. borivilianum* include mainly steroidal saponins, fructans and fructoligosaccharides (FOS), acetylated mannans, phenolic compounds and proteins. In this review paper, an attempt has been made to explore various dimensions of the drug including phytochemical and pharmacological studies carried out on this drug.

Safed musli (*Chlorophytum borivilianum*) is a herb, belongs to family Liliaceae. It was originally grown in thick forests of India. About 300 species are distributed throughout the tropical and subtropical parts of the world Tropical and subtropical zones of Africa are the probable centres of origin of the genus. Seventeen species of *Chlorophytum* had been reported in India¹. All differ in medicinal properties but due to lack of correct information, all of them are called safed musli. In India, it is considered as a valuable medicinal herb, whereas in other parts of the world it is being used as ornamental plant. The roots (tubers) are rich in alkaloids, vitamins, minerals, proteins, carbohydrates, saponins, polysaccharides and steroids. It has various therapeutic values as total rejuvenator, antioxidant and Immunomodulator. It is being used as an anti arthritic and anticancer drug. Because of its aphrodisial properties, it is mainly identified as 'Herbal viagra'. Safed musli is found in tropical moist and dry deciduous forests². It is widely distributed in India mainly in Southern Rajasthan, Western Madhya Pradesh, North Gujarat and few parts of Karnataka. But, continuous exploration has decreased its frequency, distribution and the quality. The 'Safed Musli' complex is generally supposed to consist of *Chlorophytum borivilianum*, *C. arundinaceum*, *C. tuberosum* and *Asparagus adscendens*. Among all these varieties *C. borivilianum* is cultivated on large scale in many parts of the county



because it produces the highest yield and highest saponin content and used as Safed Musli. Although Indian forests are rich in ‘Safed Musli’, its demand is increasing rapidly in the Indian and international drug markets. According to a report in 2005-06, the demand for dry Safed musli is in the order of 35,000 tonnes per annum, the supply stands at 5,000 tonnes per year³. Hence there is a strong need to understand the current scenario of its cultivation, description and its new medicinal properties.

Clinical uses : Traditionally, tubers are used in the treatment of rheumatism and the leaves as vegetable in various culinary preparations. It is traditionally used for its aphrodisial properties in lack of libido male impotency, oligospermia. It is also widely used as a general health promotive tonic and for delaying the ageing process. Dried root powder increases the lactation amongst the feeding mothers and lactating cows. It also removes the knee pains within a week if taken daily with milk,. Leaves are eaten by the tribal people of Western Ghats as an expectorant. In the traditional diet of nursing mothers (after confinement) its powder is added in the preparation of laddoos (sweet prepared in ball form) to be taken as a energizing food. Efforts are on in countries like the USA and England to make chips/flakes with the tubers to use it as a nutritious item in breakfast. *C. borivilianum* has been described in ancient Indian literature such as Bhavaprakash nighantu, Rasendra Sarsangrah, Raja Ballabh Nighantu as ‘Vajikaran’ or aphrodisiac. The roots of *C. borivilianum* are a constituent of ‘Chyawanprash’ an outstanding rejuvenator. It is known as the Indian Ginseng, because of great therapeutic importance and its tubers are the major constituents of more than 100 ayurvedic preparations

Shatavari or Asparagus : Shatavari, sometimes known as wild asparagus, is primarily a reproductive tonic (both male and female), a demulcent for the digestive system, and a powerful adaptogen. Shatavari is perhaps best known as a female rejuvenative. It is useful for infertility, decreased libido, threatened miscarriage, menopause, leucorrhea and has the ability to balance pH in the cervical area. Dry membranes, such as those on the vaginal wall, are also brought into balance through the herbs demulcent action.

Shatavari Medicinal Uses:

Shatavari is also especially useful in nourishing and calming the nerves, nourishing the brain and helping to support the brain and the body in regaining balance from vata disorders like spasms,



pain, and insomnia. The most important herb in Ayurvedic medicine for women. Used internally for infertility, loss of libido, threatened miscarriage, menopausal problems. It both nourishes and cleanses the blood and the female reproductive organs. It is a good food for menopause or for those who have had hysterectomies, as it supplies many female hormones. It nourishes the ovum and increases fertility. This herb is known to increase Sattva, or positivity and healing power. It also enhances the feelings of spiritual love.

The male reproductive system will also benefit from Shatavari. It may be used in cases of sexual debility, impotence, spermatorrhea, and inflammation of sexual organs. Shatavari is also useful for hyperacidity, stomach ulcers, dysentery, and bronchial infections.

Shatavari Benefits / Benefits of Shatavari:

- Shatavari supports reproductive health by toning and nourishing the female reproductive organs
- Shatavari maintains healthy hormonal balance
- Shatavari treats PMS symptoms by relieving pain and controlling blood loss during menstruation.
- Shatavari supports normal production of breast milk for nursing mothers
- Shatavari relieves menopausal symptoms such as hot flashes. By producing estrogens it makes up for low estrogen levels in women who are menopausal or have had hysterectomies or oophorectomies
- Used in India as a best-known and most often-used herb for women
- Shatavari supports normal function of the immune and digestive system
- Shatavari also increases libido

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