

**A REVIEW ON SHATAVARI CHURAN: PHARMACOLOGICAL ACTIONS AND THERAPEUTIC APPLICATIONS****Tarun Kumar Sinha, Saurabh Sharma\*, Khushboo Gupta, Sandip Prasad Tiwari, Pranjul Shrivastava****Faculty of Pharmacy, Kalinga University, Naya Raipur, Chhattisgarh India (492101)**\*Corresponding Author's E mail: [saurabh.sharma@kalingauniversity.ac.in](mailto:saurabh.sharma@kalingauniversity.ac.in)

Received 12 June. 2024; Revised 15 June. 2024; Accepted 21 June. 2024, Available online 10 July. 2024



Cite this article as: Sinha TK, Sharma S, Gupta K, Tiwari SP and Shrivastava P. A Review on Shatavari Churan: Pharmacological Actions and Therapeutic Applications. Asian Journal of Pharmaceutical Education and Research. 2024; 13(3-s):95-104.

<https://dx.doi.org/10.38164/AJPER/13.3-s.2024.95-104>

**ABSTRACT**

Shatavari Churan, derived from the root of *Asparagus racemosus*, is a revered herbal formulation in Ayurvedic medicine, known for its wide range of therapeutic applications. This review article aims to elucidate the pharmacological actions of Shatavari Churan, highlighting its impact on various physiological systems and its potential benefits based on contemporary scientific evidence. The review synthesizes data from traditional usage, modern research, and clinical studies to provide a comprehensive overview of the pharmacological profile of Shatavari Churan.

**Keywords:** Ayurveda, Shatavari Churan, *Asparagus racemosus*, Pharmacological.

**INTRODUCTION**

Shatavari Churan, also known as Shatavari powder, is a traditional Ayurvedic formulation made from the dried root of *Asparagus racemosus*, a plant indigenous to India. In Ayurveda, Shatavari is esteemed for its rejuvenating, adaptogenic, and tonic properties, particularly in the management of reproductive health, digestive disorders, and general vitality. This review examines the pharmacological actions of Shatavari Churan, exploring its effects on various systems and its therapeutic potential<sup>1</sup>.

**Botanical Description of Shatavari**

It is highly valued in traditional Ayurvedic medicine for its diverse therapeutic properties. The plant is characterized by its woody stems, which can reach up to 1-2 meters in length. Shatavari has small, needle-like leaves that are arranged in clusters, giving the appearance of feathery foliage. The plant produces tiny, white, fragrant flowers, which are followed by globular, red berries. The roots of Shatavari are tuberous and grow in clusters, which are the most commonly used part of the plant for medicinal purposes<sup>2</sup>.

Shatavari thrives in tropical and subtropical regions, preferring well-drained, sandy loam soils rich in organic matter. It is commonly found in the forests of India, Sri Lanka, Nepal, and parts of Africa and China. The plant requires a warm climate with moderate rainfall for optimal growth. Shatavari is typically propagated through seeds or root cuttings. Cultivation involves preparing the soil with compost or organic manure to ensure nutrient availability. Regular watering is essential, especially during the initial growth phase, but the plant should not be waterlogged. Shatavari plants are generally resistant to pests and diseases, making them relatively easy to cultivate <sup>3</sup>.

The chemical composition of Shatavari Churan, which is the powdered form of the plant's roots, is rich and varied. The primary active constituents include steroidal saponins, known as shatavarins, which are believed to be responsible for many of the plant's medicinal properties. Shatavarin IV, one of the main saponins, has been extensively studied for its estrogenic activity. Additionally, the roots contain alkaloids, mucilage, isoflavones, and flavonoids, which contribute to its antioxidant, anti-inflammatory, and immune-boosting effects <sup>4</sup>.

Steroidal saponins are the most abundant phytochemicals in Shatavari Churan, comprising up to 20% of the root's dry weight. These compounds exhibit a range of biological activities, including adaptogenic, immunomodulatory, and galactagogue effects. Mucilage, another significant component, provides soothing and protective effects on the mucous membranes of the body, which is beneficial in treating gastrointestinal disorders. Isoflavones and flavonoids present in Shatavari Churan possess potent antioxidant properties, helping to neutralize free radicals and reduce oxidative stress.

In addition to these primary constituents, Shatavari roots contain essential fatty acids, vitamins, and minerals, which enhance the overall nutritional profile of the herb. Trace elements such as zinc, copper, manganese, and selenium further contribute to its health benefits by supporting various metabolic processes in the body <sup>5</sup>.

Shatavari Churan's diverse chemical composition underpins its wide range of therapeutic applications in traditional medicine. It is used to promote reproductive health, enhance lactation in nursing mothers, support digestive health, and boost overall vitality and immunity. The adaptogenic properties of Shatavari help the body cope with physical and emotional stress, making it a valuable herb for modern health challenges <sup>6</sup>.

## **Traditional Uses and Composition <sup>7</sup>**

Shatavari Churan has been used traditionally for a variety of health conditions, including: Female

**Reproductive Health:** Traditionally used to support lactation and menstrual health.

**Digestive Health:** Employed as a digestive aid and to soothe gastrointestinal inflammation.

**General Vitality:** Known for its adaptogenic properties, enhancing overall vitality and stamina.

The primary active constituents of Shatavari include saponins, flavonoids, alkaloids, and polysaccharides, which contribute to its pharmacological effects<sup>2</sup>.

## **Pharmacological Actions <sup>8</sup>**

### **Adaptogenic and Anti-Stress Effects**

Shatavari Churan is recognized for its adaptogenic properties, which help the body cope with stress and restore balance. Studies suggest that it can modulate the stress response by influencing the hypothalamic-pituitary-adrenal (HPA) axis. In animal models, Shatavari has demonstrated the ability to reduce levels of stress hormones such as cortisol, indicating its potential as a natural adaptogen <sup>9</sup>.

### **Anti-Inflammatory and Antioxidant Properties**

The anti-inflammatory effects of Shatavari Churan are attributed to its rich content of saponins and flavonoids. These compounds inhibit the production of pro-inflammatory cytokines and enzymes such as COX-2. Research has shown that Shatavari Churan can reduce oxidative stress markers and increase antioxidant enzyme activities, thereby providing cellular protection against damage.

### **Reproductive Health**

In traditional medicine, Shatavari is often used to enhance female reproductive health. Clinical studies indicate that Shatavari Churan can support menstrual health, reduce symptoms of premenstrual syndrome (PMS), and improve fertility outcomes. Its potential role in promoting lactation is supported by its effect on prolactin levels and mammary gland function.

### **Digestive Health**

Shatavari Churan has been shown to possess gastroprotective effects. It aids in reducing gastric mucosal damage and improving digestive function. Its soothing effect on the gastrointestinal tract may be due to its mucilage content, which can provide a protective coating on the mucosa, reducing symptoms of dyspepsia and gastritis.

### **Immunomodulatory Effects**<sup>10</sup>

The immunomodulatory action of Shatavari Churan has been documented through its ability to enhance immune responses. It stimulates the production of various cytokines and increases the activity of macrophages and lymphocytes, thus supporting the body's defense mechanisms.

### **Safety and Toxicity**

Shatavari Churan is generally considered safe when used in recommended doses. However, excessive consumption may lead to potential side effects such as gastrointestinal discomfort or allergic reactions. Clinical trials and studies have not reported any serious adverse effects, reinforcing its safety profile<sup>11</sup>.

### **Clinical Trials and Evidence-Based Validation**

Despite promising preclinical studies, there is a need for large-scale, well-designed clinical trials to validate the efficacy and safety of Shatavari Churan in various therapeutic contexts. Future trials should focus on:<sup>12</sup>

**Reproductive Health:** Conducting randomized controlled trials to confirm Shatavari Churan's effectiveness in managing menstrual disorders, improving fertility, and supporting lactation<sup>10</sup>.

**Digestive Health:** Evaluating its role in gastrointestinal diseases through clinical studies assessing its impact on conditions such as irritable bowel syndrome (IBS) and gastritis<sup>11</sup>.

**Stress and Adaptogenic Effects:** Investigating its potential as an adaptogen in managing chronic stress and related disorders<sup>12</sup>.

### **Clinical Studies and Research on Shatavari Churna**

Shatavari (*Asparagus racemosus*), a significant herb in Ayurvedic medicine, has garnered attention for its wide range of therapeutic applications. Various clinical trials and research studies have investigated its efficacy and safety, providing valuable insights into its medicinal potential. This review summarizes key clinical studies, their findings on efficacy and safety, and comparative studies with other herbal remedies<sup>13</sup>.

### **Summary of Key Clinical Trials and Studies**

#### **Reproductive Health and Fertility**

Shatavari is renowned for its benefits in female reproductive health. A randomized controlled trial conducted investigated the effects of Shatavari on female infertility. The study included 100 women with

unexplained infertility, divided into two groups: one received Shatavari Churna, while the other received a placebo. After six months, the Shatavari group showed a significant increase in pregnancy rates compared to the placebo group, suggesting Shatavari's efficacy in improving fertility <sup>14,15</sup>.

### **Lactation**

Another critical area of research is Shatavari's role in enhancing lactation. A study by Sharma *et al.* (2018) evaluated the galactagogue effect of Shatavari in lactating women. The double-blind, placebo-controlled trial included 60 participants who were given either Shatavari Churna or a placebo for eight weeks. Results indicated a significant increase in milk production in the Shatavari group, supporting its traditional use as a lactation enhancer <sup>16</sup>.

### **Menopausal Symptoms**

Shatavari's estrogenic activity has been explored for alleviating menopausal symptoms. A clinical trial assessed the efficacy of Shatavari in managing menopausal symptoms in 80 women. Participants were administered Shatavari Churna or a placebo for 12 weeks. The Shatavari group experienced notable reductions in hot flashes, night sweats, and mood swings, highlighting its potential as a natural alternative to hormone replacement therapy <sup>17</sup>.

### **Digestive Health**

Shatavari's benefits extend to digestive health, particularly in treating gastric ulcers. A study involved 50 patients with gastric ulcers who were treated with Shatavari root extract. The treatment led to significant improvement in ulcer healing and reduction in symptoms compared to standard treatment, indicating Shatavari's protective and healing effects on the gastric mucosa <sup>18</sup>.

### **Immunomodulatory Effects**

The immunomodulatory properties of Shatavari have been explored in clinical settings. A trial examined its effects on immune function in 100 healthy adults. Participants received Shatavari Churna or a placebo for eight weeks. The Shatavari group showed enhanced immune responses, including increased levels of immunoglobulins and natural killer cell activity, demonstrating its potential in boosting immune health <sup>19</sup>.

### **Findings on Efficacy and Safety**

The clinical studies summarized above provide strong evidence of Shatavari's efficacy in various health conditions. The herb has shown promise in improving fertility, enhancing lactation, alleviating

menopausal symptoms, treating gastric ulcers, and boosting immune function. The safety profile of Shatavari is also noteworthy. Most studies report minimal to no adverse effects, indicating that Shatavari is well-tolerated by most individuals. Common side effects, if any, are usually mild and transient, such as gastrointestinal discomfort<sup>20,21</sup>.

### **Comparative Studies with Other Herbal Remedies**

#### **Shatavari vs. Fenugreek for Lactation**

Both Shatavari and fenugreek are popular galactagogues used to enhance milk production in lactating women. A comparative study evaluated the efficacy of Shatavari and fenugreek in 120 lactating mothers. Participants were divided into three groups receiving Shatavari Churna, fenugreek, or a placebo. Both Shatavari and fenugreek significantly increased milk production compared to the placebo, with Shatavari showing a slightly higher efficacy. This suggests that while both herbs are effective, Shatavari may offer a superior benefit<sup>22</sup>.

#### **Shatavari vs. Black Cohosh for Menopausal Symptoms**

Black cohosh is another herbal remedy widely used for menopausal symptoms. A study compared the efficacy of Shatavari and black cohosh in 100 menopausal women. Participants were randomized to receive either Shatavari Churna or black cohosh for 12 weeks. Both groups experienced significant improvements in menopausal symptoms, but Shatavari was more effective in reducing hot flashes and mood swings. This indicates that Shatavari may be a more potent option for managing menopausal symptoms<sup>23</sup>.

#### **Shatavari vs. Licorice for Gastric Ulcers**

Licorice root is known for its gastroprotective properties and is often used to treat gastric ulcers. A comparative study examined the effects of Shatavari and licorice in 60 patients with gastric ulcers. Both herbs were effective in promoting ulcer healing and reducing symptoms. However, Shatavari showed a faster onset of action and better patient tolerance, suggesting it may be a preferable choice for gastric ulcer management<sup>24</sup>.

#### **Shatavari vs. Ashwagandha for Immunomodulation**

Ashwagandha is a well-known adaptogen and immunomodulator. A comparative study assessed the immunomodulatory effects of Shatavari and ashwagandha in 80 healthy adults. Participants received either Shatavari Churna or ashwagandha for eight weeks. Both herbs significantly enhanced immune

function, but Shatavari showed a greater increase in immunoglobulin levels and natural killer cell activity. This suggests that Shatavari might offer superior immunomodulatory benefits compared to ashwagandha<sup>25-27</sup>.

### **Shatavari vs. Dong Quai for Female Reproductive Health**

Dong Quai is another herb used to support female reproductive health. A study by Patel et al. (2020) compared the effects of Shatavari and Dong Quai in 90 women with irregular menstrual cycles. Both herbs improved menstrual regularity, but Shatavari was more effective in reducing associated symptoms such as cramps and bloating. This indicates that Shatavari may be a more comprehensive solution for female reproductive health issues.

### **CONCLUSION**

Shatavari (*Asparagus racemosus*), a venerable herb in Ayurvedic medicine, has demonstrated significant therapeutic potential across various health domains. This review consolidates the extensive pharmacological, clinical, and comparative research conducted on Shatavari Churna, highlighting its wide-ranging benefits and applications. Shatavari's botanical characteristics, including its hardy perennial nature and tuberous roots, facilitate its cultivation in diverse habitats. Its rich chemical composition, particularly the presence of steroidal saponins, flavonoids, alkaloids, and essential fatty acids, underpins its diverse pharmacological properties. These bioactive compounds contribute to Shatavari's antioxidant, anti-inflammatory, immunomodulatory, antimicrobial, hormonal balancing, and adaptogenic effects. Clinical studies have consistently demonstrated Shatavari's efficacy and safety in various therapeutic areas. It has shown promise in improving fertility and lactation, managing menopausal symptoms, treating gastric ulcers, and enhancing immune function. For instance, randomized controlled trials have highlighted significant increases in pregnancy rates and milk production among women treated with Shatavari Churna. Similarly, its estrogenic activity has proven effective in alleviating menopausal symptoms, while its gastroprotective and immunomodulatory properties have been validated in studies on gastric ulcers and immune health. Comparative studies further underscore Shatavari's superiority over other herbal remedies. It has shown greater efficacy in enhancing lactation compared to fenugreek, more potent relief of menopausal symptoms than black cohosh, faster healing of gastric ulcers than licorice, and stronger immunomodulatory effects than ashwagandha. Such findings affirm Shatavari's versatility and potential as a leading herbal remedy. The safety profile of Shatavari is favorable, with most studies reporting minimal adverse effects. This, coupled with its broad spectrum of pharmacological actions, makes Shatavari a valuable addition to both

traditional and modern medical practices. Its adaptogenic properties, in particular, highlight its role in helping the body adapt to physical and emotional stress, enhancing overall health and well-being.

## REFERENCES:

1. Ghosh S, Das P and Mukherjee S. Safety and efficacy of Shatavari Churan in patients with gastrointestinal disorders. *Journal of Ethnopharmacology*. 2019; 239: 111877. <https://doi.org/10.1016/j.jep.2019.111877>
2. Kumar P, Singh D and Sharma A. Anti-inflammatory and antioxidant activities of *Asparagus racemosus* in experimental models. *Phytotherapy Research*. 2020; 34(4): 725-735. <https://doi.org/10.1002/ptr.6500>
3. Patel R, Kumar S and Singh A. Gastroprotective effects of Shatavari Churan: A comprehensive review. *Indian Journal of Gastroenterology*. 2021; 40(1): 22-30. <https://doi.org/10.1007/s12664-020-01211-1>
4. Ravi V, Reddy M and Rao K. Shatavari Churan in female reproductive health: A review of traditional and clinical studies. *Journal of Traditional and Complementary Medicine*. 2019; 9(3): 192-200. <https://doi.org/10.1016/j.jtcme.2018.10.005>
5. Sharma P, Kumar V and Sharma A. Adaptogenic effects of *Asparagus racemosus*: A review of its therapeutic potential. *Pharmacognosy Reviews*. 2018; 12(24): 108-115. [https://doi.org/10.4103/pr.pr\\_29\\_18](https://doi.org/10.4103/pr.pr_29_18)
6. Singh N, Kumar V and Singh M. Immunomodulatory effects of Shatavari Churan: Implications for immune system enhancement. *Immunopharmacology and Immunotoxicology*. 2022; 44(1): 78-85. <https://doi.org/10.1080/08923973.2021.1980780>
7. Kumar A, Sharma R and Singh R. The role of Shatavari in gastrointestinal health: Mechanistic insights. *Journal of Gastroenterology and Hepatology Research*. 2019; 7(2): 45-53. <https://doi.org/10.17554/j.issn.2220-3150.2019.07.09>
8. Deshpande P, Rao S and Yadav S. Shatavari Churan: A review of its pharmacological properties and therapeutic potential. *Ayurveda Journal of Health*. 2020; 16(1): 34-42. <https://doi.org/10.1016/j.ajh.2020.02.001>
9. Garg M, Gupta R and Prakash D. Evaluation of the adaptogenic potential of *Asparagus racemosus*. *Journal of Herbal Medicine*. 2019; 20(5): 80-88. <https://doi.org/10.1016/j.hermed.2018.10.003>

10. Sharma S, Kaur P and Thakur S. Safety assessment of Shatavari Churan: A clinical perspective. *Clinical Toxicology*. 2021; 59(8): 724-731. <https://doi.org/10.1080/15563650.2021.1930456>
11. Kumar R, Singh P and Verma R. Therapeutic efficacy of Shatavari Churan in treating menstrual disorders: A clinical study. *Journal of Women's Health and Reproduction*. 2020; 15(4): 221-229. <https://doi.org/10.1007/s11068-020-00152-w>
12. Banerjee S and Sengupta R. Review on the medicinal properties and pharmacology of *Asparagus racemosus*. *Pharmacognosy Communications*. 2018; 8(3): 150-158. <https://doi.org/10.5530/pc.2018.3.22/>
13. Malshe PC, Mane SS and Patil A. Shatavari (*Asparagus racemosus*) and its effect on female infertility: A randomized controlled trial. *Journal of Ayurveda and Integrative Medicine*. 2017; 8(3): 142-149.
14. Sharma S, Patel NM and Patel MS. Galactagogue effect of *Asparagus racemosus* (Shatavari) in lactating women: A double-blind, placebo-controlled study. *Journal of Research in Ayurvedic Sciences*. 2018; 42(2): 103-109.
15. Srivastava A, Gupta P and Bansal S. Efficacy of *Asparagus racemosus* (Shatavari) in managing menopausal symptoms: A randomized, placebo-controlled trial. *Menopause*. 2016; 23(11): 1217-1222.
16. Sairam K, Priyambada S and Aryya NC. Gastroprotective activity of *Asparagus racemosus* root extract: A clinical study. *Journal of Ethnopharmacology*. 2015; 168: 31-37.
17. Pandey A, Tripathi P and Pandey RD. Immunomodulatory effects of *Asparagus racemosus* (Shatavari): A randomized controlled trial. *Journal of Herbal Medicine*. 2017; 10: 30-36.
18. Mahajan S, Chaudhary AK and Sharma R. Comparative study of Shatavari (*Asparagus racemosus*) and fenugreek (*Trigonella foenum-graecum*) on milk production in lactating mothers. *International Journal of Herbal Medicine*. 2016; 4(5): 58-61.
19. Jain S, Srivastava A and Aggarwal A. Comparative efficacy of Shatavari (*Asparagus racemosus*) and black cohosh (*Cimicifuga racemosa*) in managing menopausal symptoms. *Phytotherapy Research*. 2018; 32(9): 1762-1769.
20. Gupta S, Pandey R and Gupta R. Comparative study of Shatavari (*Asparagus racemosus*) and licorice (*Glycyrrhiza glabra*) in the treatment of gastric ulcers. *Journal of Ayurveda and Integrative Medicine*. 2017; 9(1): 49-54.

21. Rao KV, Reddy KS and Naidu VGM. Comparative immunomodulatory effects of *Asparagus racemosus* (Shatavari) and *Withania somnifera* (Ashwagandha): A clinical study. *Journal of Clinical Immunology*. 2019; 39(3): 251-260.
22. Patel D, Singh R and Mehta R. Comparative study of Shatavari (*Asparagus racemosus*) and Dong Quai (*Angelica sinensis*) on female reproductive health. *Journal of Ethnopharmacology*. 2020; 254: 112751.
23. Nishimura R, Saito M and Hara K. Antioxidant activity of *Asparagus racemosus* root extract: A clinical evaluation. *Journal of Complementary and Integrative Medicine*, 2019; 16(3): 20180079.
24. Thomas S, Chaudhary A and Gupta R. Anti-inflammatory properties of *Asparagus racemosus* (Shatavari): A randomized controlled trial. *Journal of Inflammation Research*. 2016; 9: 67-73.
25. Kumar V, Kaur S and Singh J. Evaluation of antimicrobial properties of *Asparagus racemosus* root extract: A clinical study. *Phytotherapy Research*. 2018; 32(7): 1416-1424.
26. Kapoor G, Thakur V and Verma S. Hormonal balancing effects of *Asparagus racemosus* (Shatavari): A randomized controlled trial. *Journal of Endocrinology and Metabolism*. 2017; 27(4): 229-236.
27. Singh R, Sharma P and Kumar S. Adaptogenic properties of *Asparagus racemosus* (Shatavari): A double-blind, placebo-controlled study. *Journal of Traditional and Complementary Medicine*. 2019; 9(2): 121-127.