

## Mahameha (*Polygonatum cirrhifolium* (Wall.) Royle) – An Endangered plant of Asthavarga Mentioned in Samhitas

Dr. Raj kumar<sup>1</sup>, Dr.Om Prakash Sharma<sup>2</sup>

1. Ph. D. Schlor, Dept. of Dravya Guna, Tantia University, Sri Ganganagar Rajasthan.

2. M.D. ( Ayurveda ) Professor & H.O.D. P.G. Dept. of Dravya Guna, Tantia University, Sri Ganganagar Rajasthan.

**How to cite this article:** Raj kumar, Om Prakash Sharma(2024) Mahameha (*Polygonatum cirrhifolium* (Wall.) Royle) – An Endangered plant of Asthavarga Mentioned in Samhitas. *Library Progress International*, 44(3), 27837-27840

**Abstract-** The science of life is Ayurveda. It is a component of India's rich and illustrious past and is linked to the noble, good, and great tradition of the country's ancient Rishis (sages). The most flamboyant group of flowering plants in nature, the Astavarga are located in the Himalayan region. Astavarga, as its name suggests, is home to eight medicinal plants: Kakoli, Kshirakakoli, Meda, Mahameda, Jeevak, Risbhaka, Riddhi, and Vriddhi. These plants are members of the Zingiberaceae, Orchidaceae, and Liliaceae families. These medicinal plants are significant components of preparations including Chyawanprasha rasayan, Ashtavarga churna, Brimhanigutika, and Vajikaraghrita, among others. They are categorized as Rasayana (Rejuvenation) in Ayurveda. Astavarga plants are mostly utilized as an all-around tonic and to cure sexual dysfunction, physical weakness, body discomfort, and immune system stimulation. There haven't been many studies on the biochemical, phytochemical, and biological activities of the plants in this group. Asthavarga's Mahameha (*Polygonatum cirrhifolium* (Wall.) Royle) is a significant plant. The author of this research paper aims to provide the valuable plant's botanical and therapeutic worth.

**Keywords-** Ayurveda, Asthavarga, Samhitas, Mahameda, *Polygonatum cirrhifolium*.

### Introduction-

The timeless science of life is Ayurveda <sup>1</sup>. It is a part of India's rich and illustrious past and is linked to the noble, good, and great tradition of the country's ancient Rishis (sages). The rich history of Ayurveda has been preserved and enhanced by a number of Rishis and Maharishis, including Lord Brahma, Asvini Kumars, Indra, Atreya, Punarvasu, Dhanvantri, Bharadwaja, Nimi, Kasyapa, and other humanists. It still continues to flow well from ancient times <sup>2</sup>. This timeless legacy is carried forward by the Ayurvedic Samhitas. According to Lord Dhanvantri, Ayurveda is the science of life. It is the Veda of life the good, bad, joyful, and unhappy aspects of existence. The Garhwal Himalaya has been a centre of spiritual knowledge, religiosity and pilgrimage from ancient times and it is also rich in biodiversity. *Polygonatum verticillatum* and *Polygonatum cirrhifolium* are the two medicinal enticers from this goblet of biodiversity and key ingredients of 'Ashtavarga' of 'Ayurveda'. <sup>3</sup>

As the name Astavarga suggests, eight medicinal plants from the families Zingiberaceae, Orchidaceae, and Liliaceae make up this significant group. This group is known as Rasayana (Rejuvenation) in Ayurveda because they exhibit the qualities of Shukrajanan (Spermatogenic), Vayasthapana (Age-sustainer), Jivaniya (Vitality promoter), and Swasthya Vardhaka (Health boosting). <sup>4,5</sup>

It has long been anticipated that a number of highly significant medicinal plants are disappearing at an alarming rate. <sup>6</sup> The resurgence of traditional medical systems in India and beyond, combined with unethical harvesting, excessive exploitation of rhizomes and other portions for medicinal purposes, and the ensuing destruction of natural habitat have increased strain on forests, particularly those containing medicinal plants. It is estimated that the Himalayan temperate to alpine zones provide at least 90% of the plant species employed in the modern herbal industry. *Aconitum heterophyllum*, *Picrorhiza kurroo*, *Nardostachys grandiflora*, *Dactylorhiza hatagirea*, *Podophyllum hexandrum*, *Polygonatum verticillatum*, *Polygonatum cirrhifolium*, *Berberis* Sp., and *Paris polyphylla* are a few significant species that may be directly linked back to their natural environments. Numerous

Himalayan medicinal plant species are recognized in the Red Data Book of Indian Plants as being extremely endangered.<sup>7</sup>

**Scientific Classification:**<sup>8</sup>

Kingdom- Plantae

Clade-Tracheophytes

Phylum - Angiosperms

Subphylum - Monocotyledons

Order- Liliales

Family- Liliaceae

Genus- Polygonatum

Species- P. cirrhifolium

Syn- *Convallaria cirrhifolia* Wall.

**English Name:** King's Solomon's Seal, Mahameda, Tendril leaf Solomon's seal, Coiling leaf Solomon's Seal. Coiling leaf Polygonatum.

**Sanskrit/ Hindi Name:** Maha meda

**Habit-** A tall, perennial herb, 30- 120 cm in height.

**Habitat:** It is found at an elevation of 2000–4000 meters in Northern Asia, including China, Nepal, Bhutan, and Pakistan. found in the temperate Himalayas of India, ranging in height from 1500–3300 meters from Himachal Pradesh to Sikkim in the east, 1200 meters in Manipur, and 2000–3000 meters in other parts of Uttarakhand.<sup>9</sup>

**Botanical characteristic features:** Its stem is extremely weak, flexible, unbranched, terete or grooved, puberulous or glabrous, and it typically grows in bushes' company. It frequently climbs using the tendril-like points of the leaves; leaves: invariably in whorls of three to six, sessile, linear, 7.5 to 12.5 cm long and 3-5 mm wide; the margins typically inroll to the midrib; the leaves are constricted into the slender revolute tips, cirrhose, membranous, glaucous, and costate beneath; flowers: whorled on 2-4 flowered peduncle, 5 mm in diameter, pendulous, white, often greenish or slightly purple; peduncle, 5–15 mm long; bracts, 3–4 mm, white; pedicel, 4-6 mm long; perianth, white, 8–11 mm long, slightly constricted in middle, lobes, 2 mm long, subcylindric; stamens, 6, inserted above the tube's center, filaments–ciliate, 5 mm long, anthers-dorsifixed, comprising; ovary trigonous, 2.5 mm, style straight as long as the ovary, stigma-3; fruits, 6–8 mm in diameter, highly variable in size, green and turning orange-red when ripe, globose or ellipsoid berries; seeds, 4 mm in diameter, subglobose, testa thin; rhizomes, moniliform or terete, usually resembling ginger but less thick, 1-2 cm in diameter, white or dull white in color.<sup>10,11</sup>

**Flowering:** July-August.

**Fruiting:** September-October.

**Active ingredients:** Glucose, sucrose, and two novel steroidal saponins, sibiricoside A and B, are found in its rhizome. The primary constituents of rhizome nbutanol extract include phenol, polysaccharides, stannin, and the steroid terpenoids. The substances  $\alpha$ -L-rhamnopyranosyl,  $\beta$ -Dglucopyranoside, dauvosterol,  $\beta$ -sitosterol, 6-nonadecenoic acid, 6-stearic acid, and one inorganic molecule were found by recent spectroscopy research.<sup>12</sup>

**Properties & Action:** Cooling, mild laxative, galactagogue, aphrodisiac, depurative, wound healer, febrifuge, expectorant and tonic. Compounds extracted from its rhizome showed fungicidal activities.<sup>13</sup>

**Ayurvedic Properties of Meda**<sup>14</sup>

Properties	Mahameha
<i>Polygonatum cirrhifolium</i> (Wall.) Royle	
Family	Liliaceae
Rasa	Madhur
Guna	Guru
Veerya	Sheeta
Vipaka	Madhur
Dosa Karma	Pitta-Vaat Shamaka
Karma	Vrishya, Jivaniya, Shukral, Stanyakaraka, Kaphvardhaka

**Medicinal uses of Mahameda (*Polygonatum cirrhifolium* (Wall.) Royle) in Ayurvedic Text-:** <sup>15,16,17,18,19,20,21.</sup>

1. It is helpful for seminal problems such as cough, leprosy, skin conditions, anorexia, worms, emaciation, gout, debility, fever, and sexual debility.
2. *P. cirrhifolium* has been used medicinally for a long time. Young shoots from the plant are often put to salads and are said to be a wild, excellent leafy vegetable. It is also eaten roasted.
3. Dried rhizomes and bulbs also exhibit higher levels of energy value, protein, and macro- and micronutrients like copper, iron, potassium, and calcium. They also contain some fat and fiber.
4. The plant in the Lahaul Valley is helpful in treating joint fluid retention, pain in the waist and kidneys, and bodily strength restoration.
5. Its roots are used to make a paste that is used to heal cuts, wounds, skin irritations, and inflammations. When brewed as a tea, it can treat a variety of symptoms related to menopause, indigestion, diabetes, broken bones, insomnia, kidney pains, and infertility. The tubers are mixed with water and used to remove weakness. The leaves are eaten as a vegetable.
6. *P. cirrhifolium* is used as a tonic in the Garhwal region, and the entire plant is beneficial in treating skin conditions, wounds, ulcers, fever, coughing, bronchitis, and general debility. The herb is used in the Parvati valley of Himachal Pradesh to treat rheumatism, cough, and old age debility.
7. The herb is said to have hypoglycemic, hypertensive, antibacterial, and antifungal properties in China.
8. People in Kinnaur use roots for washing and leaves as a vegetable and tonic. The local amchi recommend using milk mixed with powdered roots as a tonic to treat burns, headaches, and skin irritation.

**Part used:** Rhizomes.

**Dosages:** As directed by the Physician.

**Formulations:** Vachadi taila, Astavarga churna, Chyavanprash rasayan, Chitrakadi taila, Mahakalyan ghrta, Mahamayura ghrta and Indrokta rasayan.

**Substitutes:** The plants Satavari (*Asparagus racemosus* Willd.), Nagbala (*Sida veronicifolia* Lam.), Prasarani (*Paederia foetida* Linn.), and Shakakul mishri (*Polygonatum multiflorum* (Linn.) All.) are examples of this.<sup>22</sup>

**Discussion-** In Asthvara, Mahameha (*Polygonatum cirrhifolium* (Wall.) Royle) is one of the most valuable plants. It is a member of the Liliaceae family. This article includes descriptions of the habitat and plants. It is suggested that *P. verticillatum* and *P. cirrhifolium* grow together because "Abhinav niguntu" documents that "Meda" grows from the same location as "Mahameda." To gather sufficient data for the study, a variety of literary sources, including journals, the internet, and classical and contemporary Ayurvedic literature, were screened. The characteristics of Mahameha (*Polygonatum cirrhifolium* (Wall.) Royle) are stated in the Nighantu texts of Dhanwantari, Raja, and Kaiyadeva, as well as in Madanpal and Bhavaprakash. *Polygonatum cirrhifolium* contains dauvosterol, 6-stearic acid,  $\alpha$  L-rhamnopyranosyl,  $\beta$ -sitosterol,  $\beta$ -D glucopyranoside, and an inorganic molecule as chemically active reagents. It has anti-mutagenic qualities as well as tannins, phenolics, flavonoids, and flavanol. Mahameda is known to have the two most significant bioactive chemicals that give its rhizomes its characteristics.

**Conclusion-** Astavarga is a key ingredient used in Ayurvedic pharmacies to formulate various herbal medications. In the Himalayan region, Mahameda (*Polygonatum cirrhifolium* Royle) is classified as prone by the international Union for Conservation of Nature and Natural Resources (IUCN). An assessment of the species is carried out when we examine the area to explain the state of flowers inside the Uttarakhand Himalaya population. In Kinnaur, *Polygonatum cirrhifolium*, sometimes referred to as Sobnyam, is a rich source of fiber, protein, pectin, and starch. The components of these compound techniques by themselves have a variety of therapeutic effects. Astavarga plant life is still needed to increase biodiversity and is present in sufficient quantities to acquire unique disease types. Plant breeding, farming, and lifestyle organizing approaches are methods that can be very helpful in sustaining and regularly reproducing vegetation.

#### ACKNOWLEDGEMENTS:

The Author now extends his heartfelt gratitude to his mentors, Dr. O.P. Sharma and Dr. Shambhu P. Patel, for their generous contributions towards the Identification and Collection of Mahameda (*Polygonatum cirrhifolium* Royle). We appreciate his efforts and interest in providing references for Ashtavarga, both of you.

**References-**

1. Pandeya G, Sashtri K (2011) Charaka Samhita (part I) (Sanskrit-Hindi) Chaukhambha Bharatee Academy, Varanasi, India, pp: 587.
2. Gupta A (2005) Astanga-samgraha. Varanasi, India: Chaukhambha Krishna Das Academy, pp: 2.
3. Dhyani A, Nautiyal B, Nautiyal M (2010) Importance of Astavarga plants in traditional systems of medicine in Garhwal, Indian Himalaya. *Int J Biodiver Sci Ecosys Serv Manag* 6(1-2): 13-19.
4. Sharma I, Singh A (2017) Clinical Studies with Ayurvedic Formulations-A Practitioner's Preview. *J Nat Ayurvedic Med* 1(1): 1-5.
5. Mukherjee PK, Wahile A (2006) Integrated approaches towards drug development from Ayurveda and other Indian system of medicines. *J Ethnopharmacol* 103(1): 25-35.
6. Tewari KC, Bhattacharjee S (1975). Green Development of Central Himalayan Hills. *Proc. Assoc. Scientific Workers (CSIR)*. pp. 1-4
7. Nayar MP, Sastary ARK (1987). Red Data Book of Indian Plants. Botanical Survey of India, Calcutta (1987, 1988, 1990). pp. 1-3.
8. HUTCHINSON J. 1973. The Families of Flowering Plants. Oxford University Press, Oxford.
9. KANDARI O. P. & GUSAIN O. P. 2001. Garhwal Himalaya: Nature, Culture and Society. Transmedia, Media House, Srinagar Garhwal, Uttarakhand, India.
10. MILLER P. 1754. The Gardeners Dictionary, ed. 1. 1731. See Druce, G. Claridge. The abridgement of Miller's Gardener's Dictionary of 1754. *Bot. Exch. Club & Soc. Brit. Isles Rept.* 3: 426-436.
11. NAITHANI B. D. 1984. Flora of Chamoli. Vol. 2, Botanical survey of India, Howrah, 654 pp.
12. Suyal R., Jugran A.K., Bhatt I.D. and Rawal R.S., Assessment of genetic diversity, population structure and phytochemical variations in *Polygonatum cirrhifolium* (Wall.) Royle: an endangered medicinal herb, *Genetic Resources and Crop Evolution*, 1-15 (2021).
13. Suyal R., Bahukhandi A., Bhatt I.D., Rawal R.S., Comparative Analysis of Biochemical Attributes of Genus *Polygonatum* in Western Himalaya, *Natl. Acad. Sci. Lett.*, 44: 457-460 (2021)
14. Sharma AR (2012) Sushruta Samhita (Part-1). Varanasi, India: Chaukhambha Sankrit Pratisthan, pp: 10.
15. Wujisguleng, W., Liu, Y. and Long, C. 2012. Ethnobotanical review of food uses of *Polygonatum* (Convallariaceae) in China. *Acta Soc. Bot. Pol.* 81: 239–244.
16. Sharma, B. D., Singh, L. and Kaur, M. J. 2014. Nutritional Composition of Rare Himalayan Herbs Constituting the World's First Health Food. *Int. J. Agri. Food Sci. Tech.* 5: 75–80.
17. Sharma, P. K., Thakur, S. K., Manuja, S., Rana, R. K., Kumar, P., Sharma, S., Chand, J., Singh, A. and Katoch, K. K. 2011. Observations on Traditional Phytotherapy among the Inhabitants of Lahaul Valley through Amchi System of Medicine A Cold Desert Area of Himachal Pradesh in North Western Himalayas, India. *Chin. Med.* 2: 93–102.
18. Kumari, P., Joshi, G. C. and Tewari, L. M. 2012. Indigenous uses of threatened ethnomedicinal plants used to cure different diseases by ethnic people of Almora district of Western Himalaya. *Int. J. Ayurvedic Herb. Med.* 2: 661–678.
19. Sharma, P. K., Chauhan, N. S. and Lal, B. 2004. Observations on the traditional phytotherapy among the inhabitants of Parvati valley in western Himalaya, India. *J. Ethnopharmacol.* 92: 167–176.
20. Singh, A. P. 2006. Ashtavarga rare medicinal plants. *Ethnobot. Leaflets* 10: 104–108.
21. Negi, V. M. and Chauhan, N. S. 2009. Medicinal and aromatic plants wealth of a tribal district Kinnaur in Himachal Himalayas. *Indian Forester* 135: 838–852.
22. Tripathi B (2004) Charaka-Samhita (I - II), Chaukhamba Surbharti Prakashan, Varanasi.