



Pharmacological Activity and Medicinal Activity of Indravaruni- A review

Dr. Nikita Sharma, Pg Scholar, Dept of Dravyaguna Vigyan, Dr. Sarvepalli Radhakrishnan Ayurved University, Jodhpur, Rajasthan

Dr. Chandan Singh, Professor & Head of Department of Dravyaguna Vijnana, Dr. Sarvepalli Radhakrishnan Ayurved University, Jodhpur, Rajasthan

Dr. Rajendra Prasad Purvia, Associate Professor, Department of Dravyaguna Vigyan, Dr. Sarvepalli Radhakrishnan Ayurved University, Jodhpur, Rajasthan

Dr. Manoj Adhlakha, Associate Professor, Department of Dravyaguna Vigyan, Dr Sarvepalli Radhakrishnan Ayurveda College, Jodhpur, Rajasthan

Dr. Garima Gocher, Pg Scholar, Depr of Dravyaguna Vigyan, Dr. Sarvepalli Radhakrishnan Ayurved University, Jodhpur, Rajasthan

Abstract

Ancient yet Timeless, *Ayurveda* gives us the mean of attaining and maintaining our optimal health and wellbeing. It's benefits have been proven over centuries of use, and its methodologies are as applicable today in the west as they were thousands of years ago in India. *Indravaruni* is a well known drug of ancient medicinal sciences. It is described in almost all Samhita's and Nighantus of Ayurveda. *Indravaruni* is *Citrullus colocynthis* Schrad belongs to family Cucurbitaceae, mostly found throughout India, both wild and cultivated. *C. colocynthis* is extensively used by Ayurvedic practitioners to treat Diabetes, Constipation, Abdominal pain, Ammenorrhea, deafness, Rheumatism etc. *Indravaruni* is described with its various formulations and indications in Samhita and Chikitsa granth. It is one of the content of *Lodhrasava*, *phaltrikadi kwath*, *Mahatiktak ghruta* etc. In this article we are going to discuss complete review of *Indravaruni*.

Keywords- *Indravaruni*, *Citrullus colocynthis* scrad., Cucurbitaceae, Ayurveda.

INTRODUCTION

At the present time infectious diseases, which are caused by microbes, remains the major cause of morbidity and mortality in the whole world. Synthetic antimicrobial medicines are available in the market but the effectiveness of these antimicrobial medicines is limited because many microbes have capacity to develop the resistance against these medicines. Most of these antimicrobials have adverse effects also. So there is serious threat to global public health due to infectious disease caused by the microbes. In the context of Ayurveda, the *krimighna* drugs, being natural products, have a tendency to kill the microbes and gives proper health and hygiene. There are more possibilities in Ayurvedic science to develop the natural antimicrobials for minimizing the threats of prolonged illness, disability, death and spreading of infectious disease produce by such microbes. Several medicinal plants have been screened for their potential antimicrobial activities but no such establishments against specific microorganism have not developed yet.

BOTANICAL DESCRIPTION-

Citrullus colocynthis [Family: Cucurbitaceae] This is perennial herbs usually trailing. Commonly found wild in the sandy lands of North West, the Punjab, Sind and central and Southern India, and coromandel coast. *Indravaruni* belongs to the family of gourds and a relative of Watermelon. It is the native of Africa and India. It is highly drought tolerant, hard, herbaceous vine. This plant can grow annual or perennial. Their stems are irregular and rough to great extent. Leaves are very rough, 5-10 cm long, deep three to seven lobed with middle

lobe and sinus in open form with triangular shape and many clefts. The upper surface of the leaves are great green but the lower part is somewhat pale.

The flowers are of yellow colour, solitary, peduncle, axillary, monoecious and corollas are 5 lobed. Their fruits are kind of pepo fruits that contain various seeds, a hard rind and other characteristics of gourd family. Their shape is globular, 4-10 cm in diameter with elliptical fissures. The small orange, green colour of fruit becomes totally yellow when ripe. Seeds are of very small size around 6mm in length, various in number, oval, compressed and smooth. Seeds become dark brown to light yellow after they ripe. This plant has large roots with long slender, tough and rough like stems which have tendency to climb over herbs.

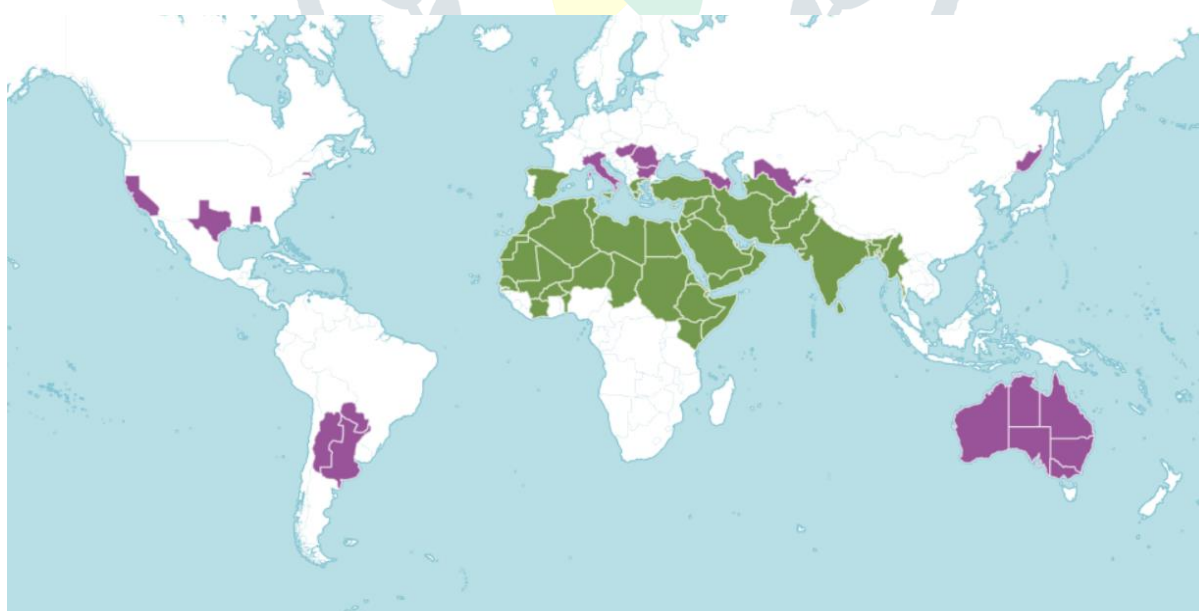


GEOGRAPHICAL DISTRIBUTION

Citrullus colocynthis This desert vine-like plant thrives in arid, sandy soils. The Mediterranean and Caspian Seas are its natural habitats. Additionally, it grows in southern European nations and on the Greek archipelago's islands. It is grown on a limited scale in Cyprus, where it has been a source of money since the 14th century and is still exported today.

Distributed in warm, arid habitats in sandy soil throughout India, upto 1500m. most abundant in north- Western Plains of India covering parts of Gujarat, Haryana, Punjab states and especially in the North-Western and Central Rajasthan including Barmer, Bikaner, Jaisalmer, Jodhpur, Ajmer, Churu and Nagaur districts, where it comes from Large patches on Sand Dunes. Distributed in Western Asia, Arabia, Africa, Mediterranean region including Syria, Egypt, Cyprus, Morocco and Sri Lanka.

Bioavailability of *Citrullus colocynthis* schrad on a world map-



■ Habitat of *Citrullus colocynthis*

■ Introducing the plant to these areas

ACTION AND USES-

The fruit is bitter and in large doses it is emetic, gastrointestinal irritant, in doses drastic hydrogogue, cathartic, diuretic and in small doses expectorant and alterative. Fruit pulp is hydrogogue, emmanagogue, vermifuge and useful in chronic constipation, dropsy, fever, piles, tumours, varicose veins, cancer, ascites, leucoderma, ulcers, gangrene, asthma, bronchitis, jaundice, dyspepsia, wounds, spasm, insanity and as hair tonic. The root is purgative, bitter, anthelmintic, abortifacient, antipyretic, carminative and depurative and used in ascites, blood diarrhoea, piles, jaundice, urinary disorders, gastro-intestinal disorders, cough, asthma, enlargement of abdomen, scrotal enlargement, swellings and warts. The leaves are applied in migraine, neuralgia and alopecia. The seed oil is used in greying of hair.

Ayurvedic properties(Pharmacodynamics)-

	Rasa	Guna	Veerya	Vipaka
Root and Leaf	Tikta, Laghu	Laghu, Sara	Ushna	Katu
Fruit	Tikta	Laghu, Ruksha Tikshana	Ushna	Katu

Doshghnata- Kaphapittashamaka**CHEMICAL CONSTITUENTS OF INDRAVARUNI**

Citrullus colocynthis Schrad have following alkaloids-

Alkaloid I, II & III choline, α-elaterin-2D-glucoside and its aglycone (in all parts); cucurbitacin B and its glycoside, cucurbitacin I & L and their 2-O-B-D- glucopyranosides (fruit, leaf, stem); arachidic, linoleic, oleic, myristic, palmitic and stearic acids, (also in peels); linolenic acid, citrullonol, elateridine, hexanorcucurbitacin I and its 16-O-acetyl derivative and 2-O-B-D- glucopyranosyl-(22,23,24,25,26,27)-hexanorcucurbitacin 1, 2-O-B-D- glucopyranosyl of cucurbitacin I and hydrolysate of the fruits gave cucurbitacin 3 and (245)-16,24 anhydro-25 methoxy-2, 160, 208, 24- tetrahydroxy-3,11,22- trioxocucurbita-1, 5-diene (cucurbitacin), cucurbitacin E & its 2 glucoside, fructosane, fructose, glucose, inositol (also in leaf): hentriacontane, 1,26-hexacosanol, n-octacosanol, isovitexin, iso-orientin, iso-orientin 3'-methyl ether (fruit).etc. Its fruit also contains myristic acid, dotriacontane, 1 tetracosanol, cucurbitacin L, isoorientin, heptacosane, docosyl acetate, methyleugenol etc. Its leaf contains Myristic acid, cucurbitacin L, citrullonol, kaempferol, cucurbitacin, quercetin etc. Its root contains nonyl palmitate, stearic acid, melonic acid, hentriacontane, lanosterol, cucurbitacin E, sitosterol etc.

CLASSICAL DESCRIPTION ON INDRAVARUNI-

In *Samhita* and *chikitsa granth* the importance of *Indravaruni* has already mentioned. In *Charak Samhita*, *Harita Samhita*, *Bhel Samhita*, *Sushrut Samhita*, *Ashtang Samgraha*, *Ashtang hridaya*, *Kashyap Samhita*, *Bhavprakash Samhita*, *chakradutta*, *yogratnakar*, *Bhaishajya ratnawali*, the respective formulations of *Indravaruni* are mentioned. Here we are going to discuss all literature review of *Indravaruni* which will help to know its importance for medicinal purpose.

Bhavprakash Nighantu-

ऐन्द्रीन्द्रवारुणी चित्रा गवाक्षी च गवादिनी ।

वारुणी च पराप्युक्ता सा विशाला महाफला ।

श्वेतपुष्पा मृगाक्षी च मृगैर्वारु मृगादनी ।।

गवादिनीद्वयं तिक्तं पाके कटु सरं लघु ।

वीर्योष्णं कामलापित्तकफप्लीहोदरापहम् ।।

श्वासकासापहं कुष्ठगुल्मग्रन्थिघ्नप्रणुत् ।

प्रमेहमूढगर्भामगण्डामयविषापहम् ।।

The names are *Eindri*, *Indravruni*, *chitra*, *gavakshi*, *gavadini*, and *Varuna*. There is second *Indravaruni* that is bigger *Indrayan*. Their names are *Mahaphala*, *Vishala*, *shwetpushpa*, *mrigakshi*, *mrigadani*. Both the *Indrayans* are bitter in taste, have *katu vipaka*, *laghu* and hot in potency. *Indravaruni* is used in the treatment of Jaundice, splenomegaly, Ascites, Asthma, COPD, wheezing, breathing difficulty, cough, cold, skin diseases, abdominal tumor, bloating, boils, nodules, wounds, diabetes, urinary tract disorders, malformed foetus.

Kaiyadev Nighantu

Kaiyadev Nighantu is written by *Kaiyadev Pandit* in 15th century A.D. *Pathya apathyavibodhak Nighantu* is another name of *kaiyadev Nighantu*. *Indravauni* is described in *Aushadhi Varga*.

ऐन्द्रीत्विन्द्रसुन्द्राहा गवाक्षी सुरवारूणी ।

ऐन्द्रवारूः क्षुद्रफला वृषभाक्षी वृषादनी ॥

मृगभक्षा मृगैवारू विशाला चेन्द्रवारूणी ।

आत्मरक्षा चित्रफला चित्रदेवी महाफला ।।

स्थाणुकर्णी धनुः श्रेणी त्रपुसी गजचिर्भटी ॥

गवदनी हस्तिदन्ती सूर्याहा मरूसम्भवा ।

ऐन्द्री तिक्ता कटुर्लव कटुपाका विरेचनी ॥

उष्णवीर्या हरेत् पित्तं कफमेहं व्रणवृहीन् ।

श्वासकासापची कुष्ठप्लीहानाहतारोदरम् ॥

कामला मूढगर्भाशिमग्रन्थिगण्डामयं विषम् ॥ (K.N. 1024-1028)

According to *Kaiyadev Nighantu*, *Indravaruni* is *katu* and *tikta rasa*, *katu* in *vipaka*, hot in potency. *Indravaruni* is used in the treatment of breathing difficulty, cough, *kushtha roga*, *pliha roga*, *Anaah* and *udar roga*. It can also be used in *kamala roga*, *mudhgarbha* etc.

Shodhala Nighantu

This *Nighantu* is written by *shodhal* son of *Bhaskar* in 12th century A.D.

इन्द्रवारूण्यामिन्द्राहा मृगैवारूमृगादनी ।

काकादनी कटुफला वृषभाक्षी गवाक्ष्यापि ।।

यक्षसुरा विषघ्नी च कृमिहृद बालकप्रिया ।

शूर्या चित्रा बहुक्षेणी कंटकोकी नृपा स्मृता ॥

महेन्द्रवारूणि कायां विशाला च महाफला ।

आत्मरक्षा चित्रफला तुंबसी त्रयुषी तथा ॥

श्वेतपुष्पा मृगाक्षी च मृगैवारू मृगादिनी ॥

हस्तिदन्ती कटुरसा कपिता क्षीरकप्रिया ।

कुंभसी चित्रदेवी च वारणी गजचिर्भटा ॥ (S.N. 253-257)

In this *Nighantu*, *Indravaruni* is also named as *Indravhya*, *Mrigervaru*, *mrugadani*, *kakadani*, *katuphala*, *vrishbhakshi*, *gavakshi* etc.

PHARMACOLOGICAL ACTION-

1. Hypoglycemic-

Its root extract exhibits excellent blood sugar-lowering properties. A number of the herb's active ingredients affect how insulin is metabolised, which has a significant beneficial effect on type II diabetes.

2. Antibacterial and Anticandidal-

This plant's root extracts are useful for managing both Gram-positive and Gram-negative bacteria, including *staphylococcus aureus* and *Escherichia coli*. The term "all extracts" refers to extracts from leaves, fruits, and seeds that shown effectiveness against all strains.

3. Antioxidant-

This plant functions as a powerful antioxidant. The hydroxyl radical, superoxide anions, and singlet oxygen can all be scavenged by this plant.

4. Hypolipidemic-

In non-diabetic hyperlipidemic patients, *Citrullus colocynthis* seeds can reduce triglyceride and cholesterol levels.

5. Leucoderma

Fresh leaf extract, obtained by squeezing pounded leaves in a muslin cloth, is applied to affected areas of skin twice or thrice a day. Seed oil is applied to depigmented areas every third day. The therapy is continued till the pigments reappear and become stable. This is a reputed therapy for leukoderma in the study area.

5. Infertility

Fresh chopped roots of "colocynth" and pulp of ripe "bel" fruit (*Aegle marmelos*(L) Corr. Family-Rutaceae) are mixed in equal quantities and boiled in cow's milk in the ratio of 1:6 Two ml. milk is given twice a day for three months or till the menses becomes regular

6. Other uses

The fruit is bitter and when consumed in large quantities, it possesses emetic, gastro-intestinal irritant, drastic hydrogogue, cathartic, diuretic, and expectorant and alterative qualities. Fruit pulp is a hydrogogue, emmanagogue, and vermifuge that can be used to treat a wide range of ailments, including chronic constipation, dropsy, fever, piles, tumours, varicose veins, cancer, ascites, leucoderma, ulcers, gangrene, asthma, bronchitis, jaundice, dyspepsia, wounds, spasms, insanity, and hair loss.

The root is used to treat ascites, blood diarrhoea, piles, jaundice, urinary and gastrointestinal issues, cough, asthma, swollen glands, swellings, and warts. Additionally, it has depurative, carminative, abortifacient, anthelmintic, purgative, bitter, and purgative properties. To cure alopecia, migraines, and neuralgia, the leaves are employed. Seed oil is used when hair starts to turn grey.

DISCUSSION AND CONCLUSION-

The fruit-bearing plant *Citrullus colocynthis*, popularly known as bitter cucumber, is employed in medicine. Diabetes, jaundice, wounds, arthritis, and other conditions are treated using *Citrullus colocynthis*. This analysis unequivocally demonstrates the significance of *Indravaruni* as a valuable medicinal herb. This review article is an effort to encourage people to protect this valuable medicinal plant, which grows profusely in the sandy areas of central and southern India, the north-western part of the Punjab province, and Nepal. This review covers the morphology of plants as well as their traditional classification, distribution, Ayurvedic qualities, chemical makeup, and pharmaceutical effects. *Indravaruni* and its beneficial benefits will be covered in detail in this article, along with other useful information.

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