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The review study on Haridra medicinal plant (*Curcuma longa*)

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Abstract

Curcuma longa, often known as Haridra, is a Zingiberaceae family plant that is vital for medicine. Since Haridra is a component of several Ayurvedic remedies, including Chandraprabha vati, Mahatikta ghrita, Haridra khand, Dashamulaarista, and others, it is commonly used in Ayurveda to cure many disorders through its Rasapanchak. Its name, Haridra, comes from its hue. India's Ayurvedic Formulary uses haridra in several of its formulas. It's a crucial ingredient in many formulas. It has long been valued for its several medicinal advantages, conventional applications, and aesthetic worth. Many agents are used, including those with anti-inflammatory, antibacterial, antidiabetic, anthelmintic, hepatoprotective, hypolipidemic, antihistaminic, and antifungal properties. Ayurvedic texts mention Prameha, Krimi, Aruchi, Apachi, Pandu, Visa, and other illnesses. Everything required to comprehend Haridra in Ayurveda is included on this page, including all pertinent classical references.

Keywords: Haridra, ayurveda, *Curcuma longa* etc.

Introduction

The essential herb Haridra (*Curcuma longa* Linn.) is utilized both medicinally and ceremonially. This widely used spice is typically connected to Indian cooking, where it's utilized in curries and other regional dishes. Since ancient times, Ayurvedic medicine, which integrates dietary intake with plant-based remedies, has also used turmeric.

Curcuma longa Linn, a member of the Zingiberaceae family of ginger, is regarded as a golden medicine in Ayurveda. Many of its functions have been discovered by modern science through a variety of investigations. However, it's important to remember that this common and well-known plant is also highly regarded in several Ayurvedic texts ^[1].

This extraordinary plant has gained attention due to its wide range of health benefits. Above all, though, we need to comprehend the historical literary allusions before we can investigate any plant, which is why the review research was done. Haridra is also known by the names Varnya, Medaghna, Vrana ropak, Visodhani, Stanya sodhak, and others due to its pharmacological activity. It is a well-known Ayurvedic medicine with religious and artistic importance, and it is considered fortunate. The prevention and management of Prameha depend heavily on Haridra. Ailments like Krimi, Aruchi, Apachi, Pandu, Visa, and others are frequently treated with it. Several literary works make mention to Haridra under different names ^[2]. Numerous ancient books, dating back to Nighantu Kala, discuss it in relation to various illnesses and preventive characteristics. Many Samhitas and Nighantus make mention to Haridra, as do Ganas and Vargas. In order to have a thorough grasp of Haridra in Ayurveda, this research was conducted to gather all of the information on the ancient references ^[3].

Method and Materials

Ayurvedic and modern publications, authentic websites (PubMed, Medicinal Plants, etc.), genuine magazines, literature, manuscripts, Sanskrit Dictionary, Shabdakosha, and other sources are used to compile information about *Haridra* (*Curcuma longa*).

Outline of Haridra Plant ^[4]

- 1. Botanical name:** *Curcuma longa* Linn.
- 2. Family:** Zingiberaceae / Scitaminae ^[5].
- 3. Curcuma:** This word is derived from the Sanskrit Kunkuma, means referring to both turmeric and saffron.
- 4. Longa:** Plant is long/tall. Vernacular names of Haridra ^[6].

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Botanical Description ^[7]

- **Flowers:** Yellow
- **Rhizome:** The useful part is rhizome and it is golden-yellow within, used for dyeing.
- **Uses:** It is effective drug for jaundice, worms, Prameha and poisoning.

Taxonomical classification ^[8]

- **Kingdom:** Plantae – plants.
- **Subkingdom:** Viridiplantae.
- **Division:** Tracheophyta.
- **Class:** Magnoliopsida.
- **Order:** Zingiberales.
- **Family:** Zingiberaceae / Scitaminae.
- **Genus:** Curcuma.
- **Species:** Longa.

Morphological description ^[9]

Root stock is big and ovoid, and sessile tubers are thick, cylindrical, and bright yellow on the interior.

Leaves have a long petiole and are oblong with a narrow base. Bracts pale green; blooms pale green, as long as bracts; blossoms during wet seasons.

Habitat and Distribution ^[10]

The plant is extensively grown in warmer parts of the world, such as India, yet it is native to South Asia.

Rhizome macroscopic and microscopic characteristics ^[11].

Macroscopic & Microscopic Study ^[12]**Macroscopic Study**

Horny Structure, shattered surface orange to reddish brown, externally yellowish to yellowish-brown, with root scars and leaf base annulations; rhizomes oval, oblong, or pyriform (round turmeric) or cylindrical, usually short branching (long turmeric); former roughly half as wide as long, later 2-5 cm long and about 1-1.8 cm thick; aroma and taste ^[13].

Microscopic Study

A transverse section of the rhizome reveals a few layers of cork developed under the epidermis, scattered oleo-resin cells with brownish contents, and cortex with mostly thin-walled, rounded parenchyma cells. Cork is typically composed of 4-6 layers of thin-walled, brick-shaped parenchyma cells. The epidermis has thick-walled, cubical cells of various dimensions.

Kanda is a part of use

- **Dose:** 1-3 grammes of powdered medication.
- **Anupana:** Citraka, Triphala, Darvi, and Kalinga Dhatri rasa, together with Madhu, Guduchi, Amalaki, or Kashaya.
- **Traditional uses:** Include spiritual events like marriages and rituals using sacred threads, as well as spices.
- **Phytochemistry:** Is the study of the chemical composition of plants.

Chemical Constitutents

The primary colouring agents are curcuminoids (around 6%), of which curcumin makes up 50-60%, and essential oils (2-7%) that include a significant quantity of derivatives of bisabolane. In turmeric, curcuminoids (3-6%) make up the majority of the polyphenolic compounds. The primary chemical constituents are curcumin, desmethoxycurcumin, and bisdemethoxycurcumin ^[14].

Other Chemical Constituents

Both phenolic and non-phenolic compounds: One-hydroxy-1, 7-bis (4-hydroxy-3methoxyphenyl)-, One-hydroxy-1, 7-bis (4-hydroxy-3methoxyphenyl)-, One-hydroxy-1, 7-bis (4-hydroxy-3methoxyphenyl)-, One-hydroxy-1, 7-bis (4-hydroxy-3methoxyphenyl)-, One-hydroxy-1, 7-bis (4-hydroxy-3methoxyphenyl) (6E) Heptene-3 and 5-dione (1); heptene-3 and 5-dione (6) 5-dimethoxyphenyl-4-hydroxy-3 (1E, 6E) -7 + (4hydroxy-3-methoxyphenyl) One, six heptadiene, three, four, and so forth Among the other non-phenolic substances are terpinolene, curlone, and turmerone. Aspartic acid/asparagine, glutamic acid/glutamine, serine, glycine, argenine, proline, alanine, tyrosine, valine, methionine, leucine, and isoleucine are all found in turmeric, a water-soluble peptide ^[15].

Adulterants

Curcuma longa is seldom changed or interfered with. On the other hand, TLC and GLC fingerprint patterns could help distinguish the medication from other *Curcuma* species. *Curcuma longa* takes the place of *Berberis aristata* (Dru-Haridra).

Pharmacological Activity

Curcumin, the primary active component of turmeric, is a powerful antioxidant that is comparable in strength to vitamins C, E, and beta-carotene. This makes it a popular choice among customers seeking to prevent cancer, preserve their livers, and fight aging (Rasayana). Numerous studies have also demonstrated that turmeric (as Lekhaniya) inhibits the growth of many cancer cells. Numerous studies have proven that curcumin is safe for human consumption. It has been demonstrated that turmeric reduces post-surgical inflammation (Sothahara). It is quite effective in mending wounds (Vrana ropak). It protects against respiratory tract infections (impact on Shwasa and Kasa) ^[16].

Curcumin inhibits *Helicobacter pylori*, the bacteria that causes stomach ulcers and has been linked to stomach cancer (impact on Aruchi, Grahani and Krimi). Heavy metals like lead and cadmium can bind to curcumin, which reduces their toxicity (Vishaghna). This characteristic explains why curcumin protects the brain ^[17].

Anti-inflammatory activity

Turmeric has been shown to boost the immune system, which can lead to inflammation, damage, and infection. By inducing the immune system over extended periods of time, chronic inflammation can lead to chronic illnesses including obesity, cancer, pancreatitis, arthritis, and type 2 diabetes, as well as cardiovascular, pulmonary, metabolic, and neurological diseases. Similar to the chemical drug phenylbutazone, turmeric has been used in Indian medicine to alleviate pain, wound healing, edema, and inflammation. Curcumin, an extract derived from *Curcuma longa*, exhibits anti-inflammatory characteristics *in vitro* and *in vivo* ^[18].

Anti-Oxidant Activity

Antioxidants are essential for shielding the body from the damaging effects of radicals and oxidative stress, two major causes of disease. Turmeric's key component is curcumin's anti-oxidant action, which is used to cure DNA damage, cancer, mutagenesis, chronic diseases, and the inhibition of dangerous bacterial development ^[19].

Anti-Diabetic Activity: The effect of diabetes on the body's

organs is the biggest medical concern related to the disease. Hyperglycemia, or high blood sugar, can cause a number of problems in diabetics. Curcumin may have a hypoglycemic effect by a variety of mechanisms, including increasing the function of pancreatic beta cells that survive, reducing the number of beta 2-adrenoreceptors, and increasing the activity of the insulin receptor gene in the skeletal muscle of mice with STZ-induced type diabetes. By reducing oxidative stress, inflammation, hyperglycemia, and hyperlipidemia, curcumin can aid in the pathological alterations brought on by long-term diabetes. Different formulations of curcumin have been created to enhance its pharmacokinetic and physiochemical properties [19].

Anti-cancerous activity

The hallmark of cancer is abnormal cell proliferation. The gene that stimulates tumor cell proliferation, angiogenesis, transformation, and metastasis is significantly inhibited by curcumin. Curcumin has cytotoxic anticancer effects on tumor cells by inducing G2/M phase cell cycle and death through activation of CHOP/GADD135. By exhibiting the regulatory protein that regulates abnormal cell development during the cell cycle, curcumin limits the proliferation of cells. Many cancers, including those of the breast, oesophagus, and prostate, are initiated and progressed in part by cyclin D1. Curcumin possesses the ability to counteract oxygen radicals that might cause cancer, including superoxides, hydroxyl radicals, and peroxides [20].

Table 1: Showing types of Haridra according to Bruhatree

Name of Samhita	Types of Haridra
Acharya Charaka	Lekhniya Mahakashaya
	Kusthaghna Mahakashaya
	Visaghna Mahakashaya
	Sirovirecana dravya
	Apatarpanausadha
	Tikta Skandha
Acharya Susruta	Vamana dravya
	Vacadi gana
	Haridradi gana
	Mustadi gana
	Vata samsamana
	Slesma samsamana
	Lakshadi gana
	Tikta varga
Acharya Vagbhata	Haridradigana
	Mustadigana
	Vacaharidradigana

Formulations of Haridra

- **Taila:** Jatyadi taila, Vajrak taila etc.
- **Kasaya:** Varaadikashaya, Mahatiktakashaya etc.
- **Gutika:** Punarnava mandoor, Chandraprabha vati, Vasantakusumakar rasa etc
- **Avaleha:** Haridrakhand Avaleha.
- **Asava-arista:** Dashamulaarista, Kanakvindaarista, Pippalyasava etc.
- **Churna:** Rajaniaadi Churna, Bhunimbaadi Churna etc.
- **Guggulu:** Chandraprabha Guggulu
- **Ghrita:** Panchatikta guggulu ghrita, Triphala ghrita, Phala ghrita, Jatyadi ghrita, Maha Kalyanak Ghrita, etc.

Conclusion

According to the present study, haridra can be utilized to treat a range of therapeutic conditions. Several Ayurvedic texts state that it has Katu-tikta rasa, Ruksha-ushna guna, Ushna

virya, and Katu vipaka. Acharya Vagbhata says that while Haridra is mostly a Pittasamak, it also functions as a Tridoshasamak. Rasapanchak by Haridra is a multidimensional endeavor. After all, haridra has many advantages and is regarded as a miracle drug in Ayurveda for a very long time.

Conflict of interest: None.

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References

1. Agnivesha. Charaka Samhita (revised by charaka and Dridhabala) with commentary of Chakrapanidatta, Edited by Acharya Vidhydhara Shukla and Ravidatta Tripathi. Varanasi: Chaukhamba Sanskrit Pratishtan; 1:357.
2. Murthy Srikanth KR, editor. SushrutaSamhita of Sushruta with English translation. 3rd ed. Varanasi: Chaukhamba Orientalia; c2007. p. 506.
3. Murthy Srikanth KR, editor. Astanga Samgraha of Vagbhata with English translation. 3rd ed. Varanasi: Chaukhamba Orientalia; c2007;1:204.
4. Murthy Srikanth KR, editor. Astanga Hridaya of Vagbhata with English translation. Reprint. Varanasi: Chaukhamba Krishnadas Academy Publication; c2007;1: 95.
5. Jeevaka V, Samhitha K. Kashi Sanskrit series-154, Chaukhamba Sanskrit samsthana Varanasi-1.
6. Sharma S, Rasatarangini. Printed by Sri Shanthi Lal Jain, Jawahar Nagar, Delhi-8.
7. Vachaspati STT. Vachaspatyam, Chaukhamba series. 2003;6:5418.
8. Sharma PV. Namarupajnaanam, 1st Ed., Satyapriya prakashan Varanasi; c2000. p. 195.
9. Agnivesha. Charaka Samhita (revised by charaka and Dridhabala) with commentary of Chakrapanidatta, Edited by Acharya Vidhydhara Shukla and Ravidatta Tripathi. Varanasi: Chaukhamba Sanskrit Pratishtan; 2:357.
10. Srivastava S. Sharangadhara Samhita of Acharya Sharangadhara. 3rd ed. Varanasi: Chaukhamba Orientalia; c2003. p. 135.
11. Sastry JLN. Dravya Guna Vijnana. 2nd ed. Varanasi: Chaukhamba Orientalia. 2005;2:788-790.
12. Sharma PC, Yelne MB, Dennis TJ. Database on Medicinal Plants used in Ayurveda, Reprint edition, New Delhi, India; Central Council for Research in Ayurveda and Siddha. 2005;1:152.
13. Sharma PV. Namarupajnaanam (Characterisation of Medicinal Plants), Reprint edition, Varanasi, India; Chaukhamba Visvabharati; c2011. p. 194.
14. Sastry JLN. Foreword by Prof. K.C. Chuneekar, Illustrated Dravyaguna Vijnana, published by- Chaukhamba Orientalia, Varanasi, edition-reprint. 2010;2:112-514.
15. Chakraborty S, Das A. A Classical Ayurveda Review on Haridra. Ayushdhara, 2020;7(1):47-55.
16. Shehzad A, Rehman G, Lee YS. Curcumin in inflammatory diseases. Biofactors. 2013;39(1):69-77.
17. Rafie H, Soheila H, Mohsen H, Sohraby H, Roxanna H. Turmeric (*Curcuma longa*): from variety of traditional medicinal application to its novel roles as active anti-oxidant, anti-inflammatory, anti-cancer, and anti-diabetes. International journal of Pharmacology, Phytochemistry and Ethenomedicine. 2015;1:37-45.
18. Nada AS, Hawas AMNED Elnashar MM, Abd Elmageed ZY. Radioprotective effect of *Curcuma longa* extract on

- Gamma-irradiation-induced oxidative stress in rats. Canadian journal of physiology and pharmacology. 2012;90(48):415-423.
19. Rafie H, Soheila H, Mohsen H, Sohraby H, Roxanna H. Turmeric (*Curcuma longa*): from variety of traditional medicinal application to its novel roles as active anti-oxidant, anti-inflammatory, anti-cancer, and anti-diabetes. International Journal of Pharmacology, Phytochemistry and Ethenomedicine. 2015;1:37-45.
 20. Chakraborty S, Das A. A Classical Ayurveda Review on Haridra. Ayushdhara. 2020;7(1):47-55.