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Turmeric in Ayurveda

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Introduction

Turmeric has been widely used in India since time immemorial for culinary, medicinal, cultural and ritualistic purposes. Known in Sanskrit popularly as *Haridra*, which means to spread a deep yellow dye or colour, turmeric is well documented in the literature of Ayurveda. In medieval Europe, turmeric was known as Indian Saffron on account of its widespread cultivation in India and its serving as a cheaper substitute for the costlier saffron. In Ayurveda, in case saffron is not available, turmeric is the only herb that can be used as a substitute in medicinal formulations. This cannot, however, be used an excuse to replace saffron with turmeric for commerical advantages.

The use of turmeric in Indian tradition can be traced to Vedic times. It is used for coloring skin patches in the *Atharva Veda* and *Taittiriya Brahmana*. There are also references to intake of turmeric powder with honey to enhance memory and with ghee to counteract snake venom. In heart disease and jaundice, rice mixed with turmeric is taken internally and also applied all over the body.

In the earliest writings of Ayurveda dating several centuries before the common era, the medicinal properties of turmeric have been elucidated in great detail. The *Caraka Samhita*, *Susruta Samhita*, *Bhela Samhita* and *Kasyapa Samhita* make mention of turmeric as an essential dietary ingredient and medicine as well.

Nomenclature of Turmeric

Turmeric is known by a variety of synonyms in Sanskrit and these synonyms sketch its main characteristics. Apart from *Haridra*, the name *Ranjani* means that which is used to dye clothes. *Pita* indicates the bright yellow color of the rhizome. The names *Varavarnini* point out that this

color is popular and considered auspicious. *Lomasamulika* means that the rhizome is hairy and *Pindaharidra* indicate that the rhizomes assume an entangled shape. The yellow color of turmeric is likened to a golden hue and hence the name *Kancani*.

The fact that turmeric was a commercial crop is indicated by the name *Hattavilasini* which means that which shines in the market. *Yoshitpriya* indicates that turmeric was popular among women for anointing the body.

Names like *Mangalya*, *Laksmi* and *Pavitra* indicate the auspiciousness of turmeric and its importance in the socio-cultural life of ancient India.

Other names of turmeric give clues to its medicinal properties. Turmeric has anthelmentic and antimicrobial properties as the name *Krmighna* suggests. So also, it is an antidote for poison as implicated in the name *Visagnhi*. *Varnavilasini* indicates that turmeric improves the complexion of the skin. It finds special application in the management of diabetes and is therefore known as *Mehaghni*.

Interestingly enough, turmeric is known as *Nisa* and *Rajani*, both meaning night. The connection between night and turmeric is not explicit in the classical writings of Ayurveda, but there is a viewpoint that turmeric rhizomes collected at night are more potent. It remains to be established scientifically whether turmeric collected at night will have a higher concentration of alkaloids and active ingredients.

Varieties of Turmeric

Only one species of turmeric is described in Ayurveda which is now indisputably identified as *Curcuma longa*. However, the cultivated and wild varieties (Vanaharidra) of turmeric were distinguished in ancient days. Apart from this, several related and non-related species of medicinal plants have been listed as varieties in the classical texts. The plant *Berberis aristata* is known as Daru Haridra or Woody Turmeric because it also yields a yellow dye similar to that of turmeric and also because, these two plants are used in combination very frequently. Turmeric and Woody Turmeric are known as the Turmeric Duo (*Haridra Dvaya*) in classical Ayurvedic texts. *Coscinium fenestratum* has also come to be known as woody turmeric. Certain other species of Curcuma have also been referred to by the epithet Haridra (Sansk. for turmeric). For example, *Curcuma amada* is known as Amragandhi Haridra in the classical Ayurvedic texts. This is on account of the morphological resemblance between the two plants. And another variety known as wild turmeric or *Aranya Haridra or Kasturi Manjal* (*Curcuma aromatica*) is used in combination with astringents and aromatics for bruises, sprains, hiccoughs, bronchitis, cough, leucoderma and skin eruptions.

Pharmacological Properties of Turmeric

The authoritative texts on Ayurveda have listed the pharmacological properties of turmeric. Turmeric has a pungent and bitter taste, is hot in potency and dries up secretions. It has a pungent post digestive taste. It is useful in a wide range of ailments like diabetes, skin diseases, itching, swelling, poisoning, anemia, wounds, ulcers, sinusitis, loss of appetite, worms and tumors (Table 13.1). It mainly regulates *Kapha* on account of its hot potency and pungent

taste. Due to bitter taste, it also normalizes *Pitta*. To some extent, it can also balance *Vata*. *Kapha*, *Pitta* and *Vata* represent the three categories in Ayurveda under which all physiological functions can be subsumed. *Kapha* stands for functions that build structure, secretions, immunity and like. *Pitta* stands for digestion, metabolism and other biochemical transformations. *Vata* represents control, movement and regulation of physiological functions.

Table 13.1. Some uses of Turmeric, as single and or combination drug and or with adjuncts) in Ayurveda (A) Home Remedies (H.R)

Sl. No	Main Drug Turmeric Dry D/Raw R	Combn: Drug C/Adjunct Ad	Use(s)External (E) Oral (O)	Function	Docum (A) Oral (HR)	References
1.	Powder (D)	Mustard paste (C)	Leech therapy	Weaning leech & to disinfect wound	A	13
2.	Paste (R)	Neem (C) leaves	Ring worm,Scabies, chicken pox (E)	Wormicidal, Anti-fungal, Skin remedy	H R	—
3.	Paste(D)	Gooseberry juice (C)	Antidiabetic (O)	Microvasculardamage prevention	14 A	
4.	Powder (D)	Jaggery(Ad)	Flush the calculus(O)	Dislodging Urinary stones	A	15
5.	Powder (D)	Cow's urine(Ad)	Anti-toxic(O)	Nullifies the plant & animal poisons	A	13
6.	Powder (D)	Euphorbia species (C)	Alkalifying effect (E)	Cauterizes the hemorrhoids	A	14
7.	Rhizomes (D)	Oil (Ad)	Inhalation (E)	Nasal decongestant	H	—
8.	Powder (D)	Buttermilk (Ad)	Diet (O)	DigestiveAnti-diarrhoeal Anti-microbial	H	—
9.	Concentrated jelly like substrate of decoction of Rhizomes	Berberis aristata concentrated jelly extract	Application of Paste over the wound (E)	Aids wound healing especially over the joints	A	18

D = Dry rhizome R(J).Raw (Juice); M.D = Major Drug; C.D = Combination Drug; Kal = Kalkan; P.C = Prakshepa-churnam; O = Oral; E = External; Kash = kashayam; Drug W.T = woody Turmeric

The officinal part used is the rhizome of turmeric, which is chopped into pieces or made into a paste in the fresh state. If dried, it is powdered and used both internally and externally. The rhizome that is bulky and revealing a saffron color when sliced is recommended for medicinal use. [12]

Turmeric is not known to cause any significant side effects on prolonged use. But there is a very interesting reference to a method for purifying turmeric before use in Ayurveda. Turmeric is to be boiled in cow's urine, the juice of *Luffa acutangula* and the group of five tender leaves which *Mangifera indica*, *Syzygium cuminii*, *Limonia acidissima*, *Citrus acida* and *Aegle marmelos*.Then it is to be steamed in the vapours of the group of aromatic plants which include *Abies spectabilis*, *Cinnamomum tamala*, *Vetiveria zizanioides*, *Cyperus rotundus*, *Saussurea lappa*, *Sida rhombifolia*.This procedure makes it completely non-toxic. [13]

Excessive amount of turmeric can render food bitter. It can also cause thinning of blood and hence used carefully with anticoagulants.

Uses of Turmeric in Ayurveda

Turmeric is used singly or in combinations but the instances of its use in combination with other herbs and drugs outnumbers its single uses (Table 13.2).

Table 13.2: Some examples (only) of diverse categories of a few Reputed Ayurvedic Remedies containing turmeric as major/ auxiliary (mostly) ingredient

Sl. No	Medicine Category	Name of Formulation (Medicine)	Form of Turmeric D,R(J), (with W.T)	Turmeric added as M.D/C.D /KashKal/ P.C.etc	Administ-ered O/E	Therapeutic claims	Reference
1.		Haridra Khandam	D	M.D	O for 7 days	Anti-allergicUseful in Urticaria	[15]
2.	Churnam	Sudarshana Churnam	D	C.D	O	Anti-pyretic in all kinds of fevers especially due to water borne infection and caused due to use of incompatible medication	[22]
3.	Churnam	Rajanyadi Churnam	D	C.D	O to be licked	Digestive, appetizer, Useful in range of pediatric disorders especially in duodenal disorders.	[22]
4.	Kashayam	Nishakatakadi Kashayam	D	C.D	O	Diabetes	[17]
5.	Lehyam	Brahma Rasayanam	D	P.C	O	Rasayanam, promotes longetivity	[18]
6.	Ghritam	Mahapanc agavya ghritam	D	C.D	O	Epilepsy and in psychic disorders constant use is advocated	[20]
7.	Ghritam	Kalyanaka ghritam	D	C.D	O	Indicated in range of psychological disorders and in infertility	[20]
8.	Thailam	Lakshadi Thailam	D	C.D	E	For paedeatric use, prevent cold and upper respiratory disorders, nourishes children	[16]
9.	Thailam	Jathyadi thailam	D	C.D	E	Cleanses and aids healing uselul in chronic ulcers and in fistulous tract	[21]

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Turmeric powder is used to wean the leech away after it is made to suck blood from the body of patients for therapeutic purposes [14]. This practice has a dual purpose. The primary intention is to release the grip of the leech. Secondarily, turmeric serves as an antiseptic and healing agent to close the wound. A very popular combination of turmeric with neem leaves is used widely by the people of India to manage a range of skin eruptions like ringworm, scabies and chicken pox. The same combination taken internally is effective in managing worm infestations.

Turmeric made into a paste in the juice of gooseberry fruits is recommended for regular use in diabetes [15]. Clinical observations suggest that turmeric may prevent microvascular damage in diabetes more effectively than regulating blood sugar levels.

Turmeric and jaggery taken with solution of husk in water is claimed to flush out stones from the urine. [16]

Turmeric is advised to be taken with cow's urine as a general antidote for all kinds of poison. [17]

The powder of turmeric mixed in the latex of Euphorbia species is advised for external application in hemorrhoids. [18]

It is a common practice in India to inhale the smoke generated by burning dry rhizomes of turmeric dipped in oil to relieve nasal congestion. In some texts of Ayurveda, turmeric is used along with other herbs for the same purpose. Caution is to be exercised when inhaling turmeric smoke as excessive inhalation can lead to bleeding.

Buttermilk boiled with turmeric is a household remedy for diarrhoea. This recipe acts as a digestive stimulant, antimicrobial and anti-diarrheal.

The decoction made out of turmeric and woody turmeric is an excellent agent for healing all kinds of wounds [19].

Important Formulations of Turmeric in Ayurveda

Turmeric is an important ingredient in many important formulations in Ayurveda that are widely used in current clinical practice. *Haridra Khanda* is a formulation that is used for management of allergies and worm infestations [20]. *Rajanyadi Churnam* is a formulation with turmeric as the key ingredient which is used in management of a wide range of pediatric diseases [21]. *Lakshadi Tailam* is an oil with turmeric as an ingredient that is used for prevention of colds and upper respiratory disorders, especially in children [23]. *Jatyadi Tailam* is an important oil for healing chronic wounds [23]. *Nisha Katakadi Kasayam* is an important formulation for management of diabetes [24]. Some of the other important formulations in which turmeric is an ingredient are *Brahma Rasayanam* (to enhance memory and immunity) [25], *Kalyanaka Ghrtam* (for mental diseases and as anti-inflammatory) [29], *Mahapancagavya Ghrtam* (for enhancement of mental functions) [27], *Punarnava Manduram* (for anemia) [28] and *Sudarsana Curnam* (for fever).

Multifaceted Uses of Turmeric in Ayurveda

A review of classical literature on Ayurveda reveals that turmeric has multifaceted uses in medicine. Turmeric improves skin tone and complexion. It heals wounds and works as an antiseptic and antimicrobial agent. It is useful in the management of chronic wounds and skin lesions like ringworm, erysepalis etc.

Turmeric is a good carminative and liver tonic. It promotes digestion and kills worms. It is an effective antidote for food poisoning.

Turmeric is an ingredient of a formulation that purifies breast milk [30]. It has also been ascribed with immunomodulatory properties [31].

Turmeric prevents build up of fat in the body. It improves blood circulation.

Turmeric is ingredient of formulations that are used in the management of benign and malignant tumors in Ayurveda [32].

Turmeric regulates activities of the uterus and reduces pain during menstruation [33].

It is also formulated with other herbs for management of respiratory diseases. Powder of Turmeric, Black Pepper, Raisins, Jaggery, Galangal Root, Long Pepper and *Kaempferia galanga* mixed with oil is a good remedy for obtaining quick relief from respiratory distress [35].

A simple formulation of turmeric with *Terminalia chebula, Terminalia belerica, Emblica officinalis, Azadirachta indica, Sida cordifolia* and Liquorice root along with milk and ghee made out of buffalo milk is indicated for management of jaundice [36].

External application of Turmeric, Woody Turmeric and Red ochre is said to alleviate the poisonous effects inflicted through nails of animals [37].

In case of thirst which is due to derangement of Kapha, a drink made of turmeric and sugar is considered good [36].

Another interesting use of turmeric is to detoxify metals and minerals used as medicine like Tin, Mica, Iron and the like [39]. It is also an ingredient of formulations for medicated enema [40].

Corroboration with Scientific Findings

Modern scientific research has substantiated many of the claims made on the medicinal properties of turmeric in the classical Ayurvedic texts [41] Many uses of turmeric that is being substantiated by scientific research was anticipated in the tradition of Ayurveda. At the initiative of R.A. Mashelkar, former Director General of CSIR, the US Patent (USP 5,401, 5401) was successfully revoked in 1996. The case of turmeric was unprecedented, and the first revocation of a US patent based on traditional knowledge originating from the developing countries [42].

Scientific research has revealed that curcumin is the most important active ingredient in turmeric. Before the advent of green chillies, it was customary in the Indian tradition to combine turmeric with black pepper in food preparations. Researchers at St. Johns Medical College, Bangalore found that a combination of curcumin and piperine increased the absorption of curcumin 2000 times, without causing any side effects [43].

Ayurvedic texts indicate turmeric in the management of the disease known as *Pandu*, which includes anaemic conditions like leukemia. Researchers at the Loyola University Medical Centre have opined that regular use of turmeric may prevent the incidence of childhood leukemia. Perhaps this accounts for the lower incidence of childhood leukemia in parts of the world like Asia, where turmeric is consumed in large quantities [44].

Excess of NF-Kappa B, a powerful protein that promotes abnormal inflammatory response in the body can lead to Cancer, Arthritis, and a wide range of other diseases. Studies show that curcumin subdues NF-Kappa B, meaning that it may work to prevent major diseases [45].

Turmeric has been shown to prevent blood vessels from growing in tumors. It has also been found to inhibit the deposit of fat in the body in similar fashion by inhibiting angiogenesis in fat tissues.

Conclusion

Corroboration of knowledge documented in the tradition of Ayurveda with recent scientific findings can help us to discover and exploit the potential of turmeric as a healthy food adjuvant and medicine as well.

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