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Review on: Turmeric A Herbal Medicine

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A B S T R A C T

Turmeric is a medicinal type of herb. A member of the ginger family (Zingiberaceae) It is widely grown in southern and south western tropical Asia region.The main component in turmeric is 'curcumin'. Which have Various god properties, such as anti-inflammatory, antioxidant, antimutagenic, and antimicrobial. The main component curcumin' isaisolatef from the rhizomes of the herb.It has been used in india for medical purpose from centuries. The effectiveness of turmeric in various medinal treatment. The rhizome contains yellow coloring component curcumin (3-9%), essential oil (5-6%) and oleoresin (6-13%).Traditionally, this spice has used in Ayurveda and folk medicine to treat the various deasease such ailments as gynecological problems, gastric problems, hepatic disorders,infectious diseases, and blood disorders Cardiac deasease etc. In india used as dye previous years in recent research find the turmeric is natural wonder in unani turmeric mostly used as treatment of obstruction ulcer and various inflamentory condition. Turmeric have also named as 'rasayana herb' wich is branch of ayurveda. Large interest is start when herb may have various medicinal property. In safety studies show that turmeric and curcumin have good tolerance at high dose without toxic effect thus turmeric have good potential in treatment of various disorder. About 75% of world production india is best producer in old hindu medicine turmeric mostly used as to treat sparin and also the swelling accured due to injuries. Ayurveda is a herbal and oldest medicine system the turmeric called strengthening and warm the body.

Keywords: Turmeric, curcumin, Ayurveda, haldi, traditional medicine, curcuma longa,

Introduction

Turmeric is derived from Curcuma longa L., Have family Zin-giberaceae family[1]. This species are herbaceous perennial which is cultivated in the tropical areas of Asia and Africa. In India, it is popularly called as haldi. In India Firstly cultivated in Bangladesh Turmeric have an underground stem I.e[7]. rhizome that are thick and rounded with short fingers like structure length bout up to 6-8 cm long The leaves are tall, thin, light green in colour, with a long stalk. Flowers are also borne in cone shaped spikes in the tuft of leaves the nature plant have short stem and large oblong leaves, and bears rhizomes, which are often branched and brownish-yellow in colour The rhizome, its juice or dry powder, mix milk or water which better beneficial in intestinal problems, specially diarrhoea treatment Turmeric is valuable in all world as a condiment, food, colorant, dye, drugs and medicine In Ayurveda the traditional medicine, turmeric are considered as bitter digestive and a carminative[8]. It is used by Unani practitioners to expel phlegm or kapha opening out the blood vessels to improve blood circulation to treat cardiac and digestive disorder [3].turmeric paste is used as cosmetic in face and skin to improve skin appearance and fading of blemishes. Also used in soap face wash,cleaning agent[2].In beauty culture to improve skin appearance The spice is also used to treat stomach and liver problems and heal wounds and lighten scars. It also treat digestive problems such as gastritis and acidity, helping to increase mucus secretion and to protect the stomach lining[8]. Turmeric is a good antibacterial for that person which chronically weak or ill, with in Sanskrit that translates as "germicide." It also purify the blood and stimulates the formation of new blood tissue. Turmeric improve gynecological problems. Also regulate the female reproductive system and purifies the uterus and breast milk. Such way the turmeric is the "Golden spice" in India Have a variety of use in medicine,beauty ,cosmetics[9].turmeric occupies 7% of total area under the spice in india turmeric being imp to grower, consumer and also the industries genetic enginnering plays an imp role in production increment.[11] turmeric have good role in insulin regulation and antiseptic in disinfection. Also it protect oxidation by haemoglobin turmeric extract most effective to suppress inflammation and protect from UV B-radiation damages.[22]

(Fig.1) Turmeric Powder

Synonym of turmeric

- Haldi[1,5]
- Haridra[1,2,4]
- Saffron[1,2]
- Curcuma[7]

Family: Zingiberaceae[2]
Species: C.longa[5]
Genus : Curcuma[3]
Kingdom : Plantae[22]
Biological source : Turmeric is the dried rhizome of Curcuma longa Linn[22].

(Fig.2)Turmeric plant

Importance Of Turmric:

Turmeric has good scope in various herbal solutionmost used in ayurveda as the herbal medicine also treatment of various disease. Turmeric is a natural antiseptic and antibacterial agent, useful in disinfecting cuts and burns when combined with cauliflower, it prevent prostate cancer and stop the growth of existing prostate cancer. Evented breast cancer from spreading to the lungs in mice.also used in prevention of melanoma and cause existing melanoma cells to commit suicide. Minimize the risk of childhood leukaemia it is a natural liver detoxifier. May prevent and slow the progression of Alzheimer's disease by removing amyloid plaque build up in the brain. Also show effect in etastases from occurring in many different forms of cancer. These are potent natural anti-inflammatory and many anti-inflammatory drugs also have no the side effects. As good in slowing the progression of multiple sclerosis in mice. Most imp in act as natural painkiller and cox-2 inhibitor. Various turmeric based product are beverages, cosmetics, foods, healthcare pproduc

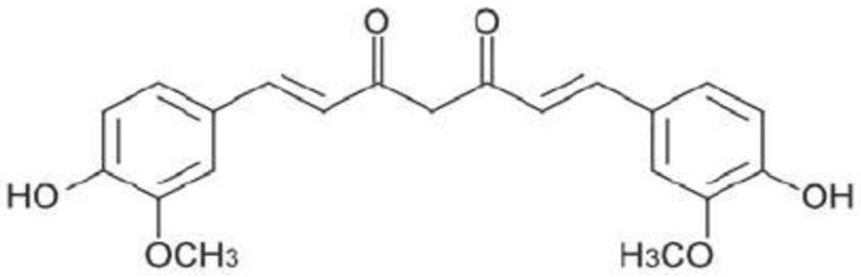
METHODOLOGY :

Cultivation And Collection :-

Turmeric Plant is a mature herbheight about 2-3 ft. short stem and matured leaf the rhizomes, which are matured and thick. Have size 5-6 cm long. This plant rhizome is select for plantation The crop requires moist environment and good water supply and a well drained soil The field should be well prepared by ploughing and crushing to a depth of about one ft. and manure 25-39 Bull kart farmyard and green manures. Also NOK fertiliser use for better yield Use fingers of the previous crop having one or two buds are planted 3-inches deep at distance of 10-15 inches from may to August. The weeding is required to remove unwanted plant grow in the field with hand. Also spraying is required using fungicide to prevent loss of leves insecticide are sprayed when the attack of insect on crop plant. The water is given using thibak sinchan.The crop is ready for harvesting in about 8-10 months when the lower leaves turns yellow. The rhizomes are carefully dug up with hard picks, then remove soil using water careful washing and store in good areaafter that the rhizomes are boiled using the boiler machinery then dried in the sunlight then polishing us required after that rhizome are ready to use they are converted into powder form[5]. 1420

(Fig.3)Turmeric plant at field.

Chemical Composition :-



The qualitative and quantitative compositions of turmeric vary according to varieties, locations, sources, and cultivation method climate condition environmental factor etc.The rhizome contains yellow coloring component curcumin[3,4]. Commercial curcumin is generally mixture of three carcinoid's: curcumin (71.5%), demethoxy.curcumin (19.4%), and bisdemethoxycurcumin (9.1%) Generally curcumin is present about(3-9%), essential oil (5-6%) and oleoresin (6-13%). The Curcumin having a good importance in food industries, pharmaceuticals, preservatives and cosmetics. Also in artificial colour as a food colorant. In pharmaceuticals turmeric have great anti-cancerous, anti-inflammatory, antiseptic, antimicrobial and antiproliferative activities.there is pressing need to increase the production and quality to fulfil the increasing demands throughout nation and abroad[7,21,4]. Genetic improvement may plays and imp role in increasing production and quality[2]. The most common monoterpenes found in Turmeric is p-cymene, , terpinolene (terpenoline), p-cymen-8-ol, cineole, and Mycenae[9]. Dried turmeric rhizome's usually yield 1.5–5% essential oils, which are dominated by sesquiterpenes and are responsible for its aromatic taste and smell. The most common in the turmeric are turmerone, turmeronol[5,7,2].

Macroscopic Character :-

Colour :
Externally -Yellow to yellowish brown.
Internally -Yellow to yellow orange
Form :
Primary rhizome (round turmeric) are ovate, oblongs or pyriform , up to 4 cm. long and 3. cm thick. and lateral rhizomes (long turmeric)are more cylindrical and have short branched and are they are known as long turmeric are 0.5-1.5 cm long.
Size : rhizomes broad are long. They are about 4 to 7 cm long and 1 to 2 cmwidth Surface- root scars and annulations is observed
Fracture : Horny[7].
Odour : aromatic[3].

Chemical test

1. Conc. H2SO4 is mixed with alcohol or a mixture of H2SO4 with alcohol (90%) produce a deep crimson colour to turmeric[]4.
2. Boric acid mix an addition of alkalies become greenish blue turmeric[2].

5.BENIFITS :[1,18,11]

Nutrient Values of Turmeric per 100g :

Calories -354kcal

Energy Value -1481kj

Total Fat -9.88mg

Carbohydrates -65g

Protein -8g

Dietary Fiber-21g

Sugars -3g

Sodium -38mg

Zinc -4.35mg

Potassium -2525mg

Vitamin C -25.9mg

Magnesium -193mg

Copper -0.603mg

Calcium -183mg

Iron -41.42mg

Vitamin E - 3.1mg

Vit. B3 (Niacin) -5.14mg

Vitamin B6 -1.8mg

Vit. B1 (Thiamine) -0.152mg

Vit. B2 (Riboflavin) –0.233mg

Turmeric Medicinal Use :

Turmeric has various therapeutic properties, have number of benefits in our day-to-daylife.Turmeric, a golden spice, which used by the people of the Indian subcontinent for food and also to treat wide variety of disorder. As far as documented evidence, it is used daily in India for at least 6000 years as a medicine, beauty aid, cooking spice, a dye etc.Curcumin is the active component in the turmeric which have a wide range of therapeutic effects.[4]

Turmeric as a first Aid :

Turmeric has good use in the first aid the powder paste is used in the treatment burn or ruptureAlso for treatment of cough turmeric have great therapeutic effect[9].

Digestive disorder :

Turmeric are the good digestive bitter and a carminative. It is added in the foods and various dishes for improvement of digestion, reduce gas and bloating. Turmeric is consumption is beneficial for both the digestive system and the liver. Turmeric acts as a cholagogue, stimulating bile production, thus, enhancing the bodies' ability to digest fats[3,11].

Cancer treatment :

Turmeric has therapeutic anticancer activity. The most common cancer types of cancer are cure using turmeric the the liver, breast, mouth, and stomach cancer The activity of various mutagens and carcinogens can be prevented by turmeric and curcumin. Direct antioxidant and free-radical scavenging effects and their ability to indirectly increase glutathione levels have the anticarcinogenic effects of turmeric and curcumin[5,22].

COVID-19

Curcumin have found to influence the influenza A virus-induced lung tissue injury by blocking nuclear factor jB signalling and preventing the production of inflammatory cytokines and other mucous production Curcumin is a natural ligand of peroxisome proliferator-activated receptor-c, which supress the inflammatory process by reducing cytokine production hence turmeric play a similar role in pro-treatment against lung injury associated due to COVID-19 le. It show good efficacy against influenza A viral infections by regulating the immune response to prevent injury to pulmonary tissue. And mucous secretion [3,25].

Antioxidant

The curcumin is an effective scavenger for oxygen free radicals. Its antioxidant function is like a vitamins C and E. They protect against oxidation by lipids or haemoglobin. The generation of reactive oxygen species (ROS) such as H2O2, superoxide anions and nitrite radical generation by activated macrophages can be significantly inhibitedsuch way that the curcumin is good antioxidant property. Also protect hemoglobin from oxidation[5,28].

Antimutagenic activity :

Turmeric show activity of mutagenicity induced by chemical mutagens. One study shoe the protective effects of an aqueous turmeric extract and a curcumin-free turmeric extract against chemical-induced mutagenicity in bacterial strains. Both the aqueous extract and the curcumin-free extract show antimutagenicity activities against bacteria. Turmeric as a component of one formulation have atimutagenic activity against various environmental mutagens like as sodium azide, 4-nitro-O-phenylenediamine, 2-acetamidofluorene, and benzo[a]pyrene in vitro. Other study, the antimutagenic activity of turmeric was shown due to its ability to inhibit the formation of heterocyclic amines.hence the turmeric have a good antimutagens[9,23].

Cosmetics :

Turmeric have potential use in cosmetics. To produce a golden glow to the skin and make skin healthy and beautiful by reducing inflammation, smoothening and treating and preventing skin ailments like pimples rashes, acne, blackheads and blemishes. A whole range of creams, lotions, pace packs etc. are also including turmeric as an ingredient. Face washes creams are the product of turmeric used for beautifying the skin also used to produce glow to the skin.the turmeric have great importance in the cosmetic industry regular turmeric use make the skin fair, soft and smooth[6,].

Antidiabetic activity :

Turmeric has good antidibetic action against diabetes in numerous animal models. In genetically modified diabetic mouse model (KK-Ay), turmeric showed shows prevention of type 2 diabetes. Another study showed the efficacy of turmeric against alloxan-induced diabetes mellitus in a rat model [88]. Ad-ministration of turmeric to these diabetic rats was associated with a reduction in blood sugar and glycosylated hemoglobin levels. Turmeric supplementation also reduced the levels of oxidative stress in the rats. The activity of sorbitol dehydrogenase, which catalyzes the conversion of sorbitol to fructose, upon treatment with turmeric hence the turmeric also used as the antidibetic agent to prevent the diabetes mellitus[8]

Conclusion:

Turmeric are traditionally used in India as a flavourful, colourful ingredient, and the Ayurvedic medicine to evaluate the appetite, act as a carminative, and treatment of gastric disorder like gallstones and other biliary problems, as well as dyspepsia etc. Turmeric and component, curcumin, is used as antioxidants; cancer, HIV, and hypercholesterolemia treatments; and cardiovascular disease preventation. Overall due to its usesbiological safety, and cost and efficacyand thousands of years of experimentation observed that the calling turmeric “The Golden Spice of Life Turmeric are the good source of various biologically active constituents such as polyphenols, sesquiterpenes, diterpenes, triterpenoids, sterols, and alkaloids. “Turmeric,” the “Indian Saffron,” is used effectively in various medical conditions. It show therapeutic effects from improving general well-being to being a treatment component of some cancers. Also in oral health Its easy availability and affordability make it a suitable candidate for use in various health remedies.

REFERENCES:

1. Kabir, Md Tanvir, et al. "Potential role of curcumin and its nanoformulations to treat various types of cancers." Bimolecular 11.3 (2021): 392
2. Rai, Mahendra, et al. "Potential applications of curcumin and curcumin nanoparticles: From traditional therapeutics to modern nanomedicine." Nanotechnology Reviews 4.2 (2015): 161-172.
3. Gupta, H., M. Gupta, and S. Bhargava. "Potential use of turmeric in COVID-19." Clinical and experimental Dermatology (2020).
4. Gupta, Subash C., et al. "Multitargeting by turmeric, the golden spice: From kitchen to clinic." Molecular nutrition & food research 57.9 (2013): 1510-1528
5. Reeta, V., and SonikaKalia. "Turmeric: A review of its’ effects on human health." Journal of Medicinal Plants Studies 10.4 (2022): 61-63.
6. S Aggarwal BB. Turmeric, the golden spice: from traditional medicine to modern medicine. In: Benzie IF, Wachtel-Galor S, editors. Herbal medicine: biomolecular and clinical aspects. 2nd ed. Boca Raton (FL): CRC Press/Taylor & Francis, 2011
7. Tiwari R, Tripathi VD. Therapeutic effect of haridra (Curcuma longa Linn) in general and oral health—A Review Ayushdhara. 2014;1(2):40-43.
8. Therapeutic applications of turmeric (Curcuma longa) in dentistry: A promising future. J Pharm Biomed Sci. 2013;27(27):586-591.
9. Nagpal M, Sood S. Role of Curcumin in systemic and oral health: an overview. J Nat SciBiol Med. 2013 Jan;4(1):3-7.
10. S, Kazumi Y, Yasushi N. Clinical effects of toothpaste containing Curcuma longa on periodontal diseases. Kanagawa Shigaku. 2004;39(4):149-155.
11. PN, NirmalBabu K, Sivaraman K. Turmeric. The golden spice of life. In: Turmeric. The Genus Curcuma. CRC Press, Boca Raton, FL, USA, 2007, 1-14.
12. gopinathKarthikeyan K. Turmeric: a condiment,cosmetic and cure. Indian J DermatolVenereolLeprol 2018 16–21.
13. Ciavarella C, Motta I, Valente S et al. Pharmacological (or synthetic) and nutritional agonists of PPAR-c ascandidates for cytokine storm modulation in COVID-19 disease. Molecules 2020; 25: 2076.
14. Chattopadhyay I, Biswas K, Bandyopadhyay U, and Banerjee RK: Turmeric and curcumin: Biological actions and medicinal applications. Curr Sci. 2004; 87: 44–50.
15. KM: The Golden Spice. Market Survey, Facts for You; 2007; 51: 45-46 Chainani-Wu N: Safety and anti-inflammatory activity of curcumin: a component of turmeric (Curcuma longa). J. Altern.Complement Med.; 2003; 9: 161–168.
16. Aggarwal BB, Kumar A and Bharti AC: Anticancer potential of curcumin: preclinical and clinical studies. Anticancer Res.; 2003; 23: 363–398
17. .Rathaur P., Raja W., RamtekeP.W.,John S.A.: Turmeric: The Golden Spice of Life. Int J Pharm Sci Res, 2012; Vol. 3(7): 1987-1994
18. Agrwal BB, Sundram C, Malani N and Ichikawa H: Curcumin The Indian Solid Gold. Current Science; 2010; 332: 16-34
19. Tohda C, Nakayama N, Hatanaka F, and Komatsu K: Comparison of anti-inflammatory activities of six curcuma rhizomes:Apossiblecurcuminoid-independent pathway mediated by Curcuma phaeocaulis extract. Evid Based Complement Alternat Med.; 2006; 3: 255–260.
20. Mathew, A., Pushpanath, S., Indian Spices, DEE BEE Info Publications, Kerala, India 2005.
21. .Eigner, D., Scholz, D., Ferula asa-foetida and Curcuma longa in traditional medical treatment and diet in Nepal.J. Ethnopharmacol. 1999, 67, 1–6.Remadevi, R., Surendran, E., Kimura, T., In: Ravindran P.N., Babu K. N., and Sivaraman K. (Eds.). Turmeric, the Genus Curcuma. CRC Press, Taylor & Francis Group, Boca Raton, New York 2007, pp. 409–436.
22. de Jager P., Turmeric: the Ayurvedic spice of life.Availablefromhttp://www.bioponic.com/pdfs/TurmericAyurveda.pdf 2003
23. .Prasad, Aggarwal, B. B., Turmeric, the golden spice from traditional medicine to modern medicine. Herbal Medicine: Biomolecular and Clinical Aspects, Oxidative Stress & Disease Series, CRC Press, USA 2011, pp. 259–284.
24. Li, S. Y., Yuan, W., Deng, G. R., Wang, P. et al., Chemical composition and product quality control of turmeric(Curcuma longa L.). Pharm. Crops. 2011, 2, 28–54.

25. Sharma A., McLelland, H. R., Hill, K. A., Ireson, C. R. etal., Pharmacodynamic and pharmacokinetic study of oralCurcuma extract in patients with colorectal cancer. Clin.Cancer Res. 2001, 7, 1894–1900.

26. Akram M, Uddin S, Ahmed A, Khan U, Hannan A, Mohiuddin E, et al. Curcuma Longa and curcumin: A review article. Rom J Biol Plant Biol 2010;55(2):65-70.

27. Chattopadhyay I Biswas K, Bandyopadhyay U, Banerjee RK. Turmeric and curcumin: Biological actions and medicinal applications. Curr Sci. 2004;87(1):44-53.

28. Pereira Kamat M. A tradition wrapped in leaves, The Times of India, Goa, India, archived from the original on 9 October 2018