



TURMERIC (CURCUMA LONGA): Precious Medicine & Spice

Corresponding Authors:

1. Sunny Ankush Thombare

Sarsam College of Pharmacy, Palshiwadi, Sub District-Baramati, District- Pune

2. Gaurav Pandurang Yele

Sarsam College of Pharmacy, Palshiwadi, Sub District-Baramati, District- Pune

3. Nikhil Mohan Khomane

Sarsam College of Pharmacy, Palshiwadi, Sub District-Baramati, District- Pune

Guide Name:

Asst. Prof. Pratik B. Lakade

M. Pharmaceutical Chemistry

Abstract:-

Turmeric, botanically known as *curcuma longa*, Linn, grows in tropical & subtropical regions throughout world, the turmeric possesses high nutritional value. Extensive research within last half a century has proven that most of these activities, associated with turmeric are due to curcumin. The medicinal properties of Turmeric include anti-inflammatory anti-oxidant, anti-coagulant, anti-diabetic, etc. It is effectively used in diabetes, various malignant disease, Alzheimer's disease & other chronic disease,

The present paper reviews the Introduction, Taxonomical classification, Pharmacological activities, Ethanobotany, Uses of turmeric in traditional system, along with the current trends in the research on Turmeric

Keywords:

Curcuma longa, curcumin ayurvedic medicine, pharmacology.

Introduction:

Over the last several times there been adding in turmeric and its medicinal parcels. This is incompletely substantiation by large number of scientific studies published on this content. Turmeric is a spice that has entered important interest from both medical & scientific worlds. Turmeric is Spread throughout the worlds tropical & tropical regions. In Asian countries, it's extensively cultivated, primarily in India & China. Turmeric is an important spice in the world. In numerous Asian dishes, turmeric is one of the main constituents, conducting a mustard- suchlike, earthy aroma & purgent, slightly bitter taste to foods. The turmeric is known as the "Golden Spice" as well as the " Spice of Life" Turmeric has been used as medicinal factory The medicinal parcels of turmeric are known for thousands of times The Scientific name of turmeric is " Curcuma longa". It belongs to the family." Zingiberaceae". In terms of medicinal parcels turmeric is useful in colorful conditions, anti-inflammatory, Cholagogue; hepatoprotective, blood- purifying, antioxidant, liver towel cdetoxifier and regenerator, antiasthamatisanti-tumor, antiptrozoal, stomachic Carminative parcels. are revealed in literature. It decreases. elevated tube cholesterol position. Its antiplatelet exertion provides the heart and highways with protection. In lymphocytes, it also prevents DNA damage. The curcuma longa is full of carbohydrates, protein, fat, salutary minerals, essential canvases ,etc. The turmeric greasepaint is about 60- 70 carbohydrates, 6- 13 water, 6- 8 protein, 3- 7 salutary minerals, 5- 10 fat, 2- 7 salutary filaments, 3- 7 essential canvases , I- 6 curcuminoids. There are Some. 34 essential canvases in turmeric, the main ingredients of which are turmerone, germacrone, atlantone and zingiberene. In Indian drug turmeric is used for biliary diseases, anorexia, cough, diabetic wonds, hepatic complaint rheumatism & sinusitis. It's veritably useful in medicinal diligence & in medicinal purpose. therefore the turmeric have the eventuality for development of ultramodern drug for the treatment of colorful conditions.



Taxonomy:-

Kingdom: Plantae

Class = Liliospida

Sub class = commelinids.

Order = Zingiberales

Family = Zingiberaceae.

Genus = Curcuma.

Species = Curcuma longa

The wild turmeric is called Curcuma aromatica & the domestic species is Called curcuma longa.

Chemical Ingredients

Chemical ingredients- Turmeric contains unheroic colouring matter called as curcuminoids and essential oil painting. The principal element of the colouring matter is curcumin I in addition with small amounts of curcumin III, curcumin II and dihydrocurcumin. The unpredictable oil painting contains mono- and sesquiterpenes like zingiberene, α - phellandrene, sabinene, turmerone, arturmerone, borneol, and cineole. Choleric action of the essential oil painting is attributed to β - tolylmethyl carbinol. The unpredictable oil painting also contains α - and β - pinene, camphene, limonene, terpinene, terpinolene, caryophyllene, linalool, isoborneol, camphor, eugenol, curdione, curzerenone, curlone, AR- curcumenes, β - curcumene, γ - curcumene. α - and β - turmerones, and curzerenone.

Chemical Tests:

1. Turmeric greasepaint on treatment with concentrated sulphuric acid forms red colour.
2. On addition of alkali result to Turmeric greasepaint red to violet colour is produced.
3. With acetic anhydride and concentrated sulphuric acid Turmeric results violet colour. Under UV light this colour is seen as an violent red luminescence.
4. A paper containing Turmeric excerpt produces a green colour with borax result.
5. On addition of boric acid a sanguine- brown colour is formed which, on addition of alkalies, changes to greenish-blue.

Pharmacological Activities.

(i) Turmeric in respiratory diseases:

Turmeric is well accepted as kaphahura drug. Turmeric is anti-inflammatory and anti-purulent in nature. It is reported that volatile oil of turmeric as oral drug in a clinical trial was found very effective in treatment of bronchial asthma. Fresh rhizome. proved effective against whooping cough & other coughs & in dyspnea. A report of clinical trials in respiratory diseases such as bronchial asthma, bronchitis, bronchiectasis & tropical eosinophilia revealed turmeric could play a vital role as an adjuvant in improving airway resistance. Anti-asthmatic property of curcumin had been tested in guinea pig model.

(ii) Turmeric in urinary disorders:

Some recent experimental Studies suggested that the administration of curcumin is promising approach in the treatment of renal disorders. In Brunes (Darussalam), turmeric rhizome is used to cure urinary infection as a traditional method. Curcumin and curcuminoids as oral drug to prevent the formation of urinary calculi. The nephroprotective effect of curcumin was analyzed in rat Curcumin protected ADR induce proteinuria, albuminuria, hyperlipemia, & urinary excretion Curcumin restored renal function

(iii) Turmeric in Jaundice conditions:

For curing hostility, turmeric paste was applied over the body of case, conjurer carried out magical expatriation of complaint. After that, turmeric was washed off & people believed that complaint also got washed off together with turmeric. Turmeric is effective in treating hostility & is recommended in diet of cases suffering from hostility or indeed pestilent hepatitis. Clinical trial with turmeric and phyllanthus fraternus for treating pestilent hepatitis has proved veritably effective without any side goods.

(iv) Turmeric in digestive system:

Turmeric is traditionally used spice and has formed an essential component in Indian fashions from time old. In the digestive System, turmeric acts as a carminative and defensive against intestinal gas conformation. The hot energy of turmeric enables it as a digestive & goad. Turmeric is an important element of the group of medicines indicated for diarrhea, in Ashtanga for diarrhoea, in Ashtanga hridaya and Susruta samhita, two of the most reputed lexicans Ayurveda. Turmeric is anti-flatulent digestive, goad due to its hot energy. It's reported to have anti-spasmodic exertion, inhibiting inordinate peristaltic movements of intestine. Anti-flatulent conduct of turmeric or curcumin in experimental creatures. Curcumin enhanced intestinal lipase, sucrase and maltase exertion. Turmeric greasepaint increased mucin stashing in rabbits & therefore acted as a guarding, agent against annoyances. Curcumin blocked indomethacin, ethanol & stress convinced gastric ulcers in experimental rats.

(v) Antitumor, anticancerous activity:

Dietary turmeric could be effectively used as a chemopreventive agent in benzo-pyrene induced forestomach tumors in swiss mice. An ethanolic extract of a turmeric as well as an ointment containing curcumin, is reported to produce remarkable symptomatic relief in patients proved that present in with external cancerous lesions. It is now provide that antioxidants present in turmeric neutralize carcinogenic free radicals. In the course of a search for antitumor agents the extract of turmeric was found to be effective in inducing apoptosis or programmed cell death in human myeloid leukaemia cells. The chemopreventive effect of curcumin was assayed during promotion stages of colon cancer. The inhibition of adenocarcinomas of colon was reported as dose dependent. Curcumin treatment during initiation stages as well as throughout promotion stages increased apoptosis in colon tumors, compared with groups receiving azoxymethane and control death.

Cultivation:-

Turmeric is a imperishable condiment, 60 – 90 cm high with a short stem and tufted leaves; the rhizomes, which are short and thick, constitute the turmeric of commerce. The crop requires a hot and wettish climate, a liberal water force and a well- drained soil. It thrives on any soil- loamy or alluvial, but the soil should be loose and brickle . The field should be well prepared by ploughing and turning over to a depth of about 30 cm and freeheartedly manured with cropland and green coprolites. Sets or fritters of the former crop with one or two kids are planted 7 cm deep at distance of 30 – 37 cm from April to August. The crop is ready for harvesting in about 9 – 10 months when the lower leaves turn unheroic. The rhizomes are precisely dug up with hard picks, washed, and dried.

Ethanobotany:-

The genus *Curcuma* contains many taxa of economic, medicinal, ornamental and cultural importance. Throughout the world India stands as largest producer of turmeric and its cultivation is done in 150000 hectares in India.



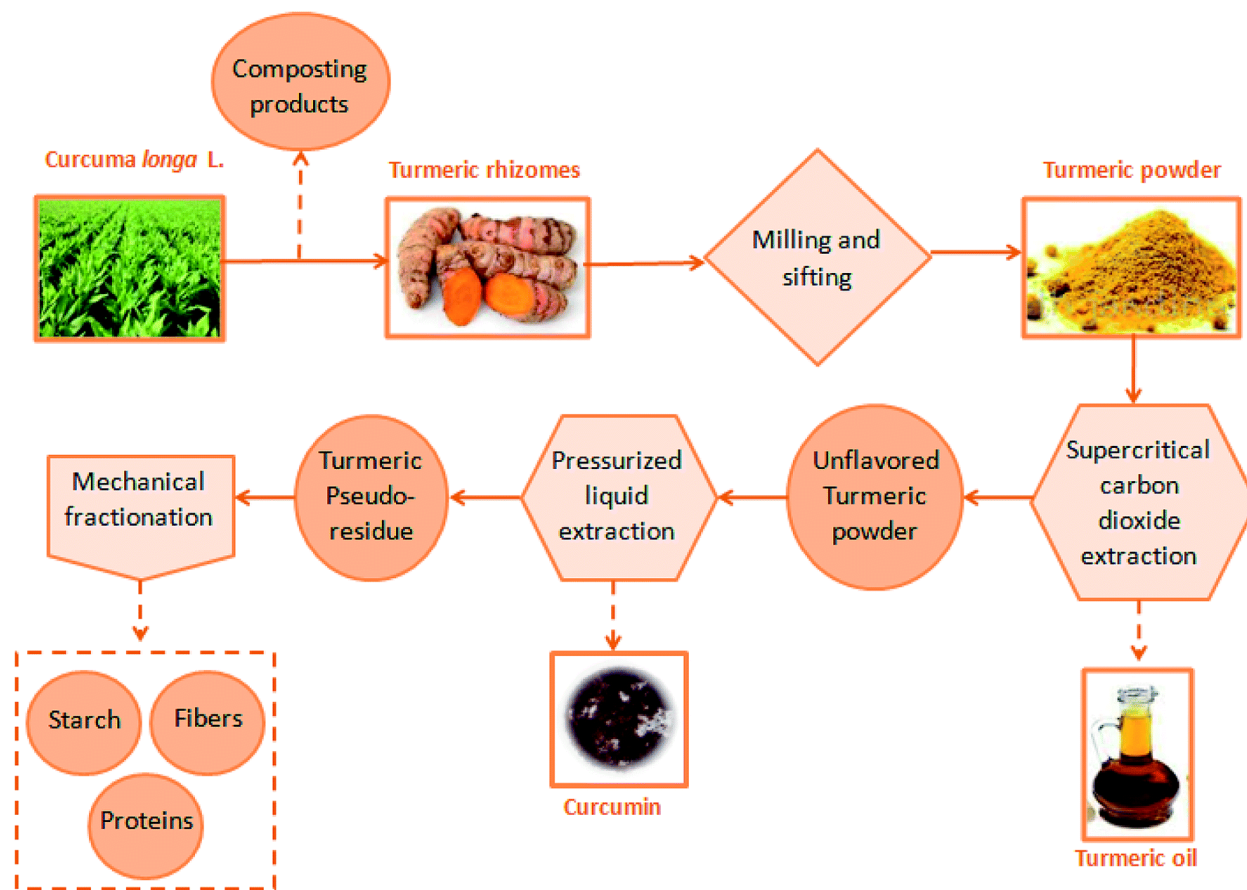
Turmeric covers 6 of total area under spices in country, which are substantially used for domestic purpose as seasoning and occupies only 8 of total product is exported annually & rest is consumed in domestic market. Maximum area under turmeric is in Andhra Pradesh followed by Maharashtra, Tamil Nadu, Orissa, Karnataka & Kerala. The rubric *Curcuma L.* (Zingiberaceae) contains numerous taxa which are economically important as food, seasoning and as coloring, medicinal and cosmetic accoutrements. Turmeric having anti-seditious, choleric, anti-microbial, nonentity repellent, anti-rheumatic, poisonous, anti-fibrotic, anti-diabetic, anti-viral, anti-hepatotoxic as well as anti-cancerous parcels in day to day domestic use as a folk lore drug from time old, with curcumin Oleoresin oil painting & other complex composites it's recently gaining significance as implicit source of medicines for colorful affections. Turmeric oil painting is used as aromatherapy and in incense assiduity piecemeal from religious, artistic uses. It's being as an thick part of Ayurvedic system of drug in India and China.

Turmeric is bitter in taste & its action is "pungent- suchlike after digestion & metabolism. Being briskly, light, acrid, and inconvenience, it's suitable to reduce rotundity stimulate all functions and clear channels. The use of turmeric as a spice, a color, or dress is well known the world over. Turmeric has got a wide range of conditioning, parcels & uses as per the ancient traditional drug textbooks, some of which are as sweet goad, alcohol, carminative and anthelmintic. It's effective in treating liver inhibition and dropsy, is extremely used for ulcers & inflammation, cures, flatulence, dyspepsia, anorexia, intermittent, complications, eczema, sprain, bruises, injuries, seditious troubles of joints, small pax, funk spell, & purulent ophthalmia, cough, ring worm and other parasitic common cold wave, skin conditions, piles, catarrh, coryza, hysterical fits, relieves pain in scorpion sting, reduces idle bumps, and is used in treatment of urinary conditions, leucoderma, conditions of blood, bad taste in mouth, elephantiasis, diarrhea, bronchitis & gonorrhoea.

Extraction of Turmeric:

Brume distillation is used with unpredictable detergents to prize turmeric essential canvases. Then, an autoclave machine was used to produce controlled pressure and controlled temperatures to pass through the turmeric, after which the brume was cooled down using water and the essential canvases were attained. also, a analogous fashion was used with a unpredictable detergent, rather than the autoclave, where they were both hotted to 40 °C. The birth took place by separating the unpredictable detergent from the solid oil painting after cooling down and filtering. Hydro-distillation is the last fashion used to prize turmeric oil painting, where the turmeric oil painting is passed through a hydro-distillation machine, yielding the essential canvases. Conventional Soxhlet

birth is a traditional outfit generally used for the birth of lipids and accoutrements that aren't water-answerable. Soxhlet can indeed store these substances, maintaining their parcels. The study using the stock liquor after the insulation of curcumin from oleoresin contains roughly 40 oil painting. The insulation and identification of the antibacterial fragments from the leftover turmeric oleoresin were done by Soxhlet birth. The stylish birth was attained with 5 ethyl acetate in hexane, while the ar- turmerone, turmerone, and curlone were linked as the significant composites after gas chromatography analysis..



Extraction of Turmeric

The material showed antibacterial exertion against *Bacillus cereus*, *Bacillus coagulans*, *Bacillus subtilis*, *Staphylococcus aureus*, *Escherichia coli*, and *Pseudomonas aeruginosa*.

Identification Tests:

Lead Chromate Test:-

To test the presence of chemicals in Turmeric greasepaint, mix a tablespoon of Haldi greasepaint with water. However, also it's real, If it settles down at the bottom and turns pale unheroic. On the other hand, thinned Haldi greasepaint will turn dark unheroic after putting it in water.

Metanil Test:-

To check whether your Turmeric is polished with the bright Metanil yellow. Add a pinch of turmeric greasepaint to a test tube, add a many drops of strong Hydrochloric acid. Shake it well. However, which may beget food poisoning, stomach cramps, If the result turns pink it indicates that there's a strong presence of Metanil.

Chalk Greasepaint Test:-

Turmeric is also thinned with pulverized chalk and to check that you need to add a tablespoon of Turmeric greasepaint in a test tube along with a many drops of water and Hydrochloric acid. However, also you must throw down the turmeric as it indicates the presence of chalk greasepaint in your Turmeric greasepaint. If there are bubbles in the result.

Other uses of turmeric traditional system-

- 1) It's an essential substance to purify the resin of Commiphora mukul before it's made use in ayurvedic preparations.
- 2) Turmeric Powder is mixed with the latex of Sauni (Euphorbia nerifolia) & is also carpeted over surgical thread constantly. This thread is known as ksharasoothra, which is tied on piles & fistula to cure them efficiently.
- 3) In veterinary drug, turmeric is used to heal injuries or ulcers of creatures.
- 4) In bloodsucker remedy turmeric greasepaint is sprinkled over the bloodsucker to detach it from the smelling point. Again turmeric greasepaint is added to water, in which the bloodsucker is kept; to make it heave the smelled blood.
- 5) Turmeric greasepaint is used as an ant repellent & ant repellent & sprinkled around vessels to be defended.
- 6) Turmeric is included in the group of unheroic substances (Peethavarga) in Rasa Sastra (Alchemy), used in processing of mercury.

Conclusion-

Turmeric is one of the most precious & important factors on earth & is being used as a natural wonder by ancient people of India. Turmeric is proving salutary in the treatment of numerous different health conditions from Cancer to Alzheimer's complaint. Studies at Jawaharlal Nehru Centre for Advanced Scientific Exploration in Bangalore, India shown that turmeric may play a vital part in fighting HIV/ AIDS, particularly HIV, type 110. Accordingly, agents that can modulate multiple cellular targets are now seductive objects of exploration. As this review has shown Curcumin is one similar agent and has implicit to treat colorful conditions. Further considerably well controlled clinical trials are now demanded to completely probe its eventuality. Anyhow of all these curcumin has established as foodstuff & also a natural drug because of its low cost, proven chemopreventive and remedial implicit & potent pharmacological conditioning of turmeric at in-vivo and in-vitro which made it a nature's precious medicine. Curcumin is fleetly moving from kitchen to the clinic.

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