

TURMERIC

Synonyms

Saffron Indian; haldi (Hindi); Curcuma; Rhizoma cur-cumae.

Biological Source

Turmeric is the dried rhizome of *Curcuma longa* Linn. (syn. *C.domestica* Valetton)., belonging to family Zingiberaceae.

Chemical Constituents

Turmeric contains yellow colouring matter called as curcuminoids (5%) and essential oil (6%). The chief constituent of the colouring matter is curcumin I (60%) in addition with small quantities of curcumin III, curcumin II and dihydrocurcumin. The volatile oil contains mono- and sesquiterpenes like zingiberene (25%), α -phellandrene, sabinene, turmerone, arturmerone, borneol, and cineole. Choleric action of the essential oil is attributed to β -tolylmethyl carbinol.

The volatile oil 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 powder on treatment with concentrated sulphuric acid forms red colour.
2. On addition of alkali solution to Turmeric powder red to violet colour is produced.
3. With acetic anhydride and concentrated sulphuric acid Turmeric gives violet colour. Under UV light this colour is seen as an intense red fluorescence.
4. A paper containing Turmeric extract produces a green colour with borax solution.
5. On addition of boric acid a reddish-brown colour is formed which, on addition of alkalies, changes to greenish-blue.
6. A piece of filter paper is impregnated with an alcohol extract, dried, and then moistened with boric acid solution slightly acidified with hydrochloric acid, and redried. Pink or brownish-red colour is developed on the filter paper which becomes deep blue on addition of alkali.

Uses

Turmeric is used as aromatic, antiinflammatory, stomachic, uretic, anodyne for billiary calculus, stimulant, tonic, car minative, blood purifier, antiperiodic, alterative, spice, colouring agent for ointments and a common household remedy for cold and cough. Externally, it is used in the form of a cream to improve complexion. Dye-stuff acts as a cholagogue causing the contraction of the gall bladder. It is also used in menstrual pains. Curcumin has choloretic and cholagogue action and is used in liver diseases. Curcumin is a nontoxic authorized colour, heat resistant and sensitive to changes in pH. Curcuminoids have antiphlogistic activity which is due to inhibition of leukotriene biosynthesis. α -Turmerone has antisnake venom activity and blocks the haemorrhagic effect of venom.