

PHYTOCHEMICAL ANALYSIS OF MARKET SAMPLE OF *CURCUMA LONGA* LINN. (TURMERIC) AND THEIR MARKETABILITY

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Abstract: Turmeric (*Curcuma longa* Linn.) is an important medicinal and spice plant. It has been reportedly effective as anti-cancer, anti thrombotic, wound healing properties and anti-venom etc. Its most important phytochemicals are Curcumin, ar-turmerone, 1-8 cineole, curcumene etc but Curcumin is the most potent phytochemical. Ten market sample of turmeric usually available in the market are studied for curcumin content and their suitability for marketability is recommended. Maharashtra nanded hingoli semifinished finger yield maximum curcuminoids in Saharanpur city samples. And, therefore, it is recommended variety for marketability.

Keywords: Anti-cancer, Anti-thrombotic, Anti-Venom, HPTLC, Phytochemicals

INTRODUCTION

Curcuma longa, commonly known as Turmeric, is a herbaceous plant of zingiberaceae family. Its origin lies in Asia, considered native of Indonesia or India. Rhizome of turmeric is of great medicinal use. It is both a medicinal and spice herb. (Weiss E.A. 2002).

Turmeric medicinal uses goes from anti-carcinogenic (Purseglove J.W. 1972; Araujo C.C.A. & Lenon L.L., 2001; Aggarwal B.B. *et al.*, 2003), anti-thrombotic (Punithavathi D. *et al.*, 1985), antidiabetic (Babu P.S. *et al.*, 1995, Babu P.S. *et al.*, 1997) to wound healing properties (Liacini A. *et al.*, 2002) & anti-venom (Araujo C.C.A. & Lenon L.L. 2001). The medicinal uses lie in its bioactive phytochemicals. Turmeric has nearly 65 bioactive constituents, found mainly in its rhizomes. Some major one are – Curcumin, curcumene, ar-turmerone, 1-8 cineole, p-coumaric acid, zingiberene, d-alpha-phellandrene. (Dewick Paul M. 2001).

Turmeric culinary uses are found in Asian countries but in western countries it is used as a colorant or dye. In India turmeric is of great culinary use. Generally in all dishes turmeric used mainly to impart color and flavour to food.

A wide range of varieties are available in Indian market like Nanded (Maharashtra), Erode and Nizamabad (Andhra pradesh) etc. Its splits, bulbs and fingers are available. Nowadays improved varieties and phytoclones are also available, example- Roma, Roma pahari, CL-69, CL-70, Sonia rajindra etc.

MATERIAL AND METHOD PLANT COLLECTION AND EXTRACTS

Important market samples were procured from Saharanpur, Delhi, Amritsar and Meerut cities. In these markets turmeric (haldi) varieties are produced from western & southern India especially from Nanded, Erode and Nizamabad. These varieties are consistently available.

These varieties were prepared as samples and extracts were analysed. Analysis was done for Curcumin and other curcuminoids content of samples.

PHYTOCHEMICAL ANALYSIS

Turmeric rhizomes were collected from different markets. This turmeric is processed turmeric i.e. boiled and sundried. Ground turmeric to powder. Take 50 mg of powder sample with methanol and sonicate. After sonication filter the extract. Collect filtrate and make volume upto 50 ml with methanol. Standard Curcumin is taken and HPTLC conditions are set.

A camag's HPTLC system consisting of TLC Scanner3, linomat 5, Twin trough development chamber & Cats 4.05 evaluation software is used.

FORMULAE

%of Curcumin = $\frac{\text{Conc. of standard (mg)} \times \text{area of test sample}}{\text{Conc of std} \times \text{Conc. of test sample} \times 100}$

%of curcuminoids = conc. of total curcuminoids
in std * area of test sample/

Area of std * Conc. of sample * 100

Table 1. Analysis of Market Samples for Curcuminoids Market Cities

S.No	Sample Details	Saharanpur	Delhi	Amritsar	Meerut
		M/s Talwar Traders	Kharibaoli	Masala Mandi	Masala Mandi
1	Maharashtra Nanded Hingoli (Bulb)	1.94	1.90	1.92	1.94
2	Maharashtra Nanded semi Finished Hingoli (Finger)	4.01	4.01	4.00	4.01
3	Nizamabad Polished (Bulb)	3.40	2.99	3.43	3.32
4	Nizamabad (Split)	2.26	2.26	2.25	2.24
5	Erode (Split)	1.19	1.18	1.09	1.18
6	Erode (Finger)	3.48	3.48	3.45	3.40
7	Erode Posh (Bulb)	1.56	1.50	1.56	1.55
8	Erode (Split)	0.83	0.80	0.82	0.81
9	Warangal (Finger)	0.66	0.60	0.65	0.60

RESULT AND DISCUSSION

We selected the bulb, finger and splits of various commercially available varieties of turmeric. The same variety samples were collected from different markets of cities Saharanpur, Delhi, Amritsar and Meerut.

The analysis revealed that Maharashtra Nanded hingoli semifinished finger sample has the maximum curcuminoids (4.01) in Saharanpur city sample. The Nanded samples of other three cities – Delhi, Amritsar and Meerut city also had nearly 4.00%w/w amount of curcuminoids.

CONCLUSION

So, the Nanded variety of turmeric is recommended for domestic use since it has appreciable amount of Curcuminoids which are of great medicinal use.

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