International Journal of Advance Research in Science and Engineering
Volume No.07, Special Issue No.03, April 2018
www.ijarse.com
IJARSE
ISSN: 2319-8354

COST EFFECTIVE METHOD FOR THE PRODUCTION OF TURMERIC POWDER

Prachi Latwade[1], Ashish Sadamate[2], Aman Tembhekar[3], Omkar Patil[4], Nikhil Bagul[5], Akshay Bade[6], Prof Vivek Nagnath[7]

[1234567]*Department of Engineering Sciences and humanities,*
Vishwakarma Institute of Technology, Pune (India).

ABSTRACT

This project will mainly focus on cost effective method for the production of turmeric powder as for the benefit of farmers is concerned. Turmeric powder can be prepared by 2 different methods, on-farm method and home method.

The turmeric powder available to us is produced by traditional method or on-farm method which is costly, low in Curcumin percentage. This project provides farmers, the knowledge and reason for opting the home method for the production of turmeric powder.

The turmeric powder produced by the home method is cost effective, and comparatively high in Curcumin percentage.

This project also involves the comparison of Curcumin percentage in turmeric powder prepared by both the methods.

Keywords: *Curcumin, Home method, On-farm, Traditional method*

I. INTRODUCTION

There is a frequent use of turmeric powder in our day to day life. It is produced by farmers by the traditional or on-farm method, from rhizomes of turmeric plant. In this method, the rhizomes are boiled in water for about 30–45 minutes and then dried in direct sunlight, after which they are ground into a deep-orange-yellow powder, commonly used as a colouring and flavouring agent in many Asian cuisines, especially for curries, as well as for dyeing [1]. But this method is quite costly as large boilers are required for boiling process and sometimes ovens are also required for the drying process. Due to high cost and complicated process, few farmers have stopped production of turmeric powder. In this project we have used home method for the production of turmeric powder.

Curcumin($C_{21}H_{20}O_6$); one of the constituent of turmeric, is a diarylheptanoid, belonging to the group of curcuminoids, which are natural phenols responsible for turmeric's yellow colour [2].

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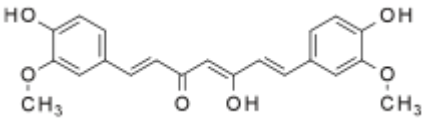
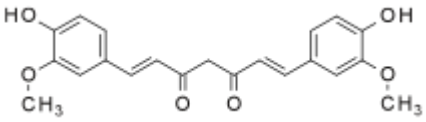


Enol form



Keto form

Curcumin has numerous benefits. The most common applications are as an ingredient in dietary supplement, in cosmetics, and as flavouring for foods, such as turmeric-flavoured beverages in the Indian Subcontinent and Southeast Asia. As a food additive for gold-orange colouring in turmeric and prepared foods, its E number is E100[2]. It is present in skincare products that are marketed as containing natural ingredients or dyes, especially in Asia [2].

Due to boiling of turmeric rhizomes, the curcumin percentage gets reduced. But in the home method, the curcumin percentage is preserved.

II. PROCEDURE

To check the complication of process, and presence of curcumin percentage, we have prepared two samples of turmeric powder. One by the on-farm method and the other by home method.

- Take 2 Kg of fresh turmeric rhizomes.
- Cleanly wash the turmeric rhizomes
- Separate the rhizomes into 1 kg each.

FOR THE ON-FARM METHOD:

- Boil 1kg of rhizomes in cooker for 45 minutes.
- After cooling, cut the rhizomes into small pieces.
- Arrange the small pieces in a plate and keep for sun drying.

FOR THE HOME METHOD:

- Directly cut the rhizomes into small pieces.
- Arrange them in a plate and keep for sun drying.

- After drying for 10 to 15 days, grind the turmeric pieces into powder separately using a mixer.
- Store the two samples in a plastic bag.
- For the determination of curcumin percentage, conduct a lab test.

Fig(1):Rhizomes of turmeric

Fig(2):Rhizomes cut into small pieces

Fig(3):Sun Drying

III. OBSERVATION

- Boiled rhizomes dry fast as compared to rhizomes directly kept for drying.
- Turmeric powder by on-farm method has an orange-yellow colour, whereas the powder by home method has light yellow colour.
- Lab reports for the test of curcumin percentage: -

Ref No :kl/F/200-201 TEST REPORT Date : 02.04.2018

Customer Name & Address:
Mr. Omkar Patil
Pune-

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Sample given by: Customer

a) Sample Name: Turmeric
b) Sample condition: Good
c) Sample Qty.: 250 gm
d) Batch No. : --- & Mfg. Date: ---
e) Sample Received Date:27.03.2018
f) Duration of analysis: 27.03.2018 – 02.04.2018

I Analysis: gm per 100 gm

Sr. No.	Sample Name	Unit	Result	Test Method
1.	Turmeric : New Method	Percent	07.96	IS 3576 – 1994
2.	Turmeric : Old Method	Percent	01.32	IS 3576 – 1994

Authorized Signatory
Prutha Ghongade

IV. CONCLUSION

A large difference is observed in the percentage of curcumin in turmeric powder prepared by both the methods. A difference of 6.64% is observed.

Therefore, the turmeric powder prepared by home method is rich in curcumin percentage and is cost effective. Home method can replace on-farm method.

V. REASONS

Reasons why traditional method was used as on-farm method:

- After boing, the rhizomes become porous and thus drying process becomes easy.
- Boiling process increases the life span of the powder as boiling kills small bacteria that could grow and damage the powder in the future.
- Colour of the powder is constant orange-yellow because of which it could be used as dyeing agent.

Reasons why home method could now be used as on-farm method:

- Nowadays as high-tech packing facilities and cold storages are available, so the powder's life span can be easily increased.
- Though the colour of the powder is light, but when used in curries or for dying, a small pinch of powder gives a rich colour to the curry.
- This method saves a lot of money. Cost of boilers, dryers, and polishers is saved. An estimated amount of Rs.5 per kg of turmeric powder can be saved by the farmers.
- Intensity of turmeric flavour is maintained which helps in fast relief of lung related diseases.
- Easy process and saves labour work.
- Due to home method, cost price of turmeric powder decreases, as well as due to high quality of curcumin, selling price increases. Thus, a very good benefit to the farmers can be observed.

VI. ACKNOWLEDGEMENTS

We are pleased to recognize Professor Vivek Shripad Nagnath for his invaluable guidance during the course of this project work. This project would have been an uphill without Prof.Nagnath's continuous direction and unwavering support. We are also grateful to other members of the department who co-operated with us, gave us access to instruments and materials and assisted us in getting past every hurdle.

Last but not the least we wish to take this opportunity to thank our Honourable Director Dr. Rajesh Jalnekar &Dr. C.M Mahajan, HOD DESH for their steady commitment and support.

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