IAMJ

INTERNATIONAL AYURVEDIC MEDICAL JOURNAL

Review Article ISSN: 2320-5091 Impact Factor: 6.719

CURCUMA ANGUSTIFOLIA: A PHYTO-CHEMICAL REVIEW OF TAVAKSIRI WITH AN AYURVEDIC APPROCH

Rikal Kailas[1], Kavitha Rikal[2], Abhaya Kumar Mishra[3]

[1]H.O.D, Associate. Prof, Dept. of. Agada Tantra (K.J.I.A.R, Savli), Ph.D. Scholar (P.I.A, Waghodia) Vadodara, Gujarat, India
[2]Asst. Prof, Dept. of Rachana Sharir (K.J.I.A.R, Savli, Guj.), Ph.D. Scholar (ADAMC)Ashta, Sangali, Maharastra. India
[3] H.O.D, Prof, Dept. of. RS & BK, Sri Sri Ayurvedic College, Cuttack, Odisha, India.

Corresponding Author: drrikalkailas@gmail.com

https://doi.org/10.46607/iamj1810122022

(Published Online: December 2022)

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Article Received: 16/11/2022 - **Peer Reviewed:** 03/12/2022 - **Accepted for Publication:** 18/12/2022

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ABSTRACT

Tavaksiri is a traditional starchy preparation widely used drug of choice in a spectrum of diseases as well as an excipient, tablet binder, and in many ayurvedic formulations. Ayurvedic mode of action of drugs is mainly based on their *rasa*, *guna*, *veerya*, *vipaka*, and *prabhava*. The present era demands scientific proof in all aspects; hence the present study is an attempt to collect the available classical and phytochemical references to overcome the knowledge gap by concentrating mainly on the analytical side.

Keywords: *Tavaksiri*, Curcuma Angustifolia Roxb. *Satva*, Starch, Physico-Chemical analysis

INTRODUCTION

Medicines used as *Ekamoolika*, *Yogas* prepared out of *Sthavara* and *Jangama Dravays* are the backbone of Ayurvedic science. The firm belief that there will be no side effects with better results makes Ayurvedic *Kalpanas* like *Satva Kalpanas*[1] makes more familiar and globally acceptable in the present modern century. The drug of choice for the present study is a water-soluble Starchy preparation extracted from

Curcuma Angustifolia Roxb using the classical *Satva Kalpana* extraction method.

AIMS AND OBJECTIVES:

- To prepare samples of *Tavaksiri*[5] by adopting the classical *Guduchi Satva*[2] extraction method.
- Physico-Chemical Analysis of *Tavaskiri* Sample[3,4,5].

MATERIALS AND METHODS:

MATERIALS:

Vernacular names[6,7,8]

Sanskrit - Tavakshira, Tavaksheeri, payaksheera, tavakshiri, vamsalocana.

Hindi - Tekur, tikhur, theksura, thavsasheera, tikor, thavakheera.

English - East Indian arrow root, curcuma starch

Kannada – Kaadu arrow root, kovegida, kove hitting gida, thavakeela.

Telugu - gaddalu.

Tamil - kisangu, araukizhangu, kooa, artimavu, kookai, kua.

METHODS:

Authenticated for identity, quality, and purity, Collected samples of Curcuma angustifolia Roxb. Rhizomes (kanda) are washed thoroughly to remove the mud and dirt and made into small pieces of 2-3 cm and then smashed and grinded to paste with the help of *khalwa yantra* or grinder. This paste is added with 6 times of clean water in a non-reactive vessel and macerated well and the fine extract will be settled down and the other fiber waste were discarded. Then the water is kept undisturbed till the *satva* settles down completely and the water turns clear. Then the supernatant clear water is darned carefully and the white colour *satva* is collected and again mixed with clean water and the procedure is repeated till the *satva* loses its bitter taste. After this, the *satva* is collected and dried under shade till it becomes dry and stored[9] in glass containers.

ANALYTICAL STUDY:

Table 01. Certificate of Analysis (Curcuma Angustifolia Starch).

VASU

Starch of Curcuma Angustifolia	Report Date	01.04.2022
	Sample ID	AD/22/066

CERTIFICATE OF ANALYSIS

Sr. No.	Parameters	Result
PHYSO-CHEMICAL ANALYSIS		
1	Alkaloids	-
2	Flavonoids	-
3	Polyphenols & Tannins	-
4	Steroids	-
5	Triterpenoids	-
6	Saponins Glycosides	-
7	Anthraquinone Glycosides	-
8	Carbohydrates	+
9	Protein	-
10	Starch	+++

Kew-Word: " +, ++, +++ " indicate **Present** in increase intensity; " - " indicate **Absent**.

Table 02. Physico-Chemical Analysis

VASU

Starch of Curcuma Angustifolia	Report Date	01.04.2022
	Sample ID	AD/22/066

CERTIFICATE OF PHYSICO-CHEMICAL ANALYSIS

Sr. No.	Constituents	Results
1	Moisture(db)	1.82 ± 0.27
2	Starch(db)	98.21 ± 0.58
3	Crude fat	0.72 ± 0.37
4	Crude protein	1.02 ± 0.37
5	Amylose(%)	32.82 ± 0.22
6	Ash	0.30 ± 0.02
7	Calorific value(cal/g)	3649 ± 1.27
8	True density	1.52 ± 0.05
9	Bulk density	0.52 ± 0.25
10	Porosity(%)	71 ± 1.25

Physicochemical Composition of Curcuma Angustifolia Starch(g/100g)

Table 03. Certificate of Properties Analysis

CERTIFICATE OF PROPERTIES ANALYSIS		
Sr. No.	**Parameters**	**Result**
1	Average Grain Size(micron)	9.86
2	Loss on Drying(%)	10.56
3	Acidity(ml of 0.01M NaOH)	0.3- 0.4
4	pH	6.2
	Properties of Curcuma Angustifolia Starch(g/100g)	

Table 04. Solubility & Swelling Index

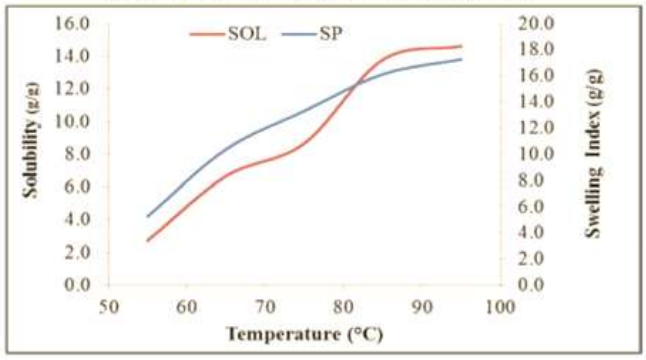
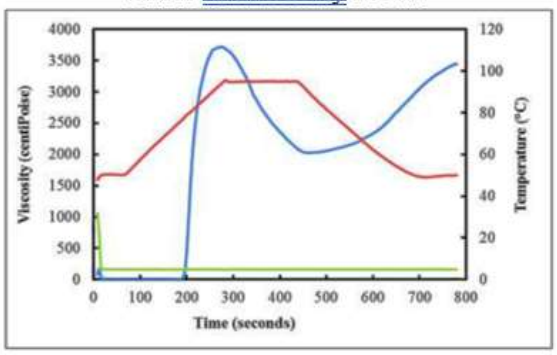


Table 05. Viscosity Profile



DISCUSSION

Tavaksiri is a water soluble Starchy extract of Curcuma Angustifolia Roxb. Water Soluble Components are extracted using the *Toyasannikarsha* process following classical the methods of *Guduchi Satva* preparation. As the classical references of Satva preparation are limited but the wide acceptance opens demands in Pharmaceutical and Analytical standardization.

CONCLUSION

Tavaksiri Starchy extract of herb belongs to the Zingiberaceae family with undifferentiated properties of *Tugakshiri(vamshalocana)* point out by *brihatraye* and Dalhana. Analytical features prove highly rich with starchy contents implying *gunakarma* as *madhura rasa*, *laghu*, *Snigdhaguna* and has *sitavirya*

ACKNOWLEDGEMENT

We are Thankful to the Management of K.J.I.A.R, Savli & P.I.A, Waghodia Gujarat, for their kind support during the entire work.

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Source of Support: Nil
Conflict of Interest: None Declared

How to cite this URL: Rikal Kailas et al: Curcuma Angustifolia: A Phyto-Chemical Review of Tavaksiri with an Ayurvedic Approch. International Ayurvedic Medical Journal {online} 2022 {cited December 2022} Available from: http://www.iamj.in/posts/images/upload/3378_3381.pdf