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# Analytical profile of *Arka Taila* - An Ayurvedic oil based medicine used in *Karnasraava* (Otomycosis)

Komal D. Jani,<sup>1</sup> Dharmendra P. Jani.<sup>2</sup>

<sup>1</sup>Associate Professor, Post Graduate Department of Shalaky Tantra, Parul Institute, Parul University, Vadodara,

<sup>2</sup>Associate Professor, Post Graduate Department of Dravya Guna, J. S. Ayurved Mahavidyalaya, Nadiad, Gujarat, India.

## ABSTRACT

Otomycosis denotes diffuse otitis externa due to fungal infections. The fungi are usually secondary invaders of the tissue rendered susceptible by bacterial infection, physical injury or excessive accumulation of cerumen in the external auditory canal. *Karnasraava* means discharge from ear which can be correlated with otorrhoea. *Karnasraava* (discharge) is one of symptom of otomycosis. *Arka Taila* has been mentioned in *Shaarngadhara* is very simple formula having ingredients i.e. *Haridraa* (*Curcuma longa*), *Arka Patra Swarasa* (*Calotropis procera*) and *Sarshapa Taila* (*Brassica campestris*). The quality control parameters resulted after scientific evaluation of *Arka Taila* can be used as reference standard for quality control or quality assurance of a pharmaceutical industry in order to have a proper quality check over its preparation and processing.

**Key words:** *Arka Taila*, Standardization, Otomycosis, *Karnasraava*.

## INTRODUCTION

Otomycosis denotes diffuse otitis externa due to fungal infections. The fungi are usually secondary invaders of the tissue rendered susceptible by bacterial infection, physical injury or excessive accumulation of cerumen in the external auditory canal.<sup>[1]</sup>

*Sneha Kalpanaa* is a process to get the oleaginous medicinal substances. *Taila Kalpana* is a technique where *Taila* is used as a base to get properties of the herbs in the media of *Sarshapa Taila*. The *Taila* acts not only as base but also vehicle. The active constituents of the drugs are incorporated into the

*Taila* to make the preparation therapeutically more potent.

*Arka Taila*<sup>[2]</sup> consists of three drugs which are *Arka*, *Haridraa* and *Sarshapa Taila*. *Arka Taila*<sup>[3]</sup> was prepared by general method of preparation of *Taila Kalpanaa*<sup>[4]</sup> in the Department of Rasashashtra and Bhaishajya Kalpana, I.P.G.T. & R.A., Jamnagar.

The proportion and properties of all the ingredients is as follow,<sup>[5]</sup>

**Table 1: Brief description of ingredients of *Arka Taila***

	<i>Arka</i>	<i>Haridraa</i>	<i>Sarshapa</i>
<b>Scientific name</b>	<i>Calotropis procera</i>	<i>Curcuma longa</i>	<i>Brasica campestris</i>
<b>Natural Order</b>	Asclepiadaceae.	Zingiberaceae	Cruciferae
<b>Part used</b>	Leaf	Rhizome	Seed (Oil)
<b>Rasa</b>	<i>Katu, Tikta</i>	<i>Tikta, Katu</i>	<i>Katu, Tikta</i>

## Address for correspondence:

Dr. Komal D. Jani

Associate Professor, Post Graduate Department of Shalaky Tantra, Parul Institute, Parul University, Vadodara, Gujarat, India.

E-mail: drjani13@gmail.com

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<b>Guna</b>	Ruksha, Laghu, Tikshna.	Ruksha, Laghu.	Tikshna, Snigdha
<b>Veerya</b>	Ushna	Ushna	Ushna
<b>Vipaka</b>	Katu	Katu	Katu
<b>Doshagh nata</b>	Kaphavatas hamaka.	Tridoshash amaka.	Kaphavatas hamaka

Table 2: Proportion of ingredients of Arka Taila

SN	Ingredients	Quantity
1	Haridra Kalka	1/8 part
2	Sarshapa Taila	1 part
3	Arka Patra Swarasa	4 part

Quality control of *Arka Taila* remains an unexplored issue despite of its increase in the popularity. Thus, in the present work an attempt has been made to use some newer approaches for the standardization of *Arka Taila* with following objectives:

## AIMS AND OBJECTIVES

To evaluate the physicochemical and phytochemical parameters of *Arka Taila*.

## MATERIALS AND METHODS

### Selection, processing and quality evaluation of the raw materials

Fresh *Haridra* was collected from the vegetable market of Jamnagar, *Sarshapa Taila* was purchased from oil mill of Jamnagar and for *Swarasa*, fresh *Arka Patra* was collected from periphery of Jamnagar city. As identification of the raw materials used to prepare any finished product is a must, all ingredients procured through local market were authenticated by Department of Pharmacognosy, I.P.G.T. & R.A., Jamnagar.

### Preparation of Arka Taila<sup>[6]</sup>

*Arka Taila* was prepared according to classical reference found in one of the Ayurveda text that is *Sharangdhar Samhita Madhyama Khanda* chapter no. 9

### Quality evaluation of Arka Taila<sup>[7]</sup>

Quality of *Arka Taila* was analyzed by employing following quality control methods;

#### Estimation of microbial load

Microbial load estimation was done immediately after preparation of the drug *Arka Taila*.

#### A. Physical Parameters<sup>[8]</sup>

Specific Gravity, Refractive Index, Loss on drying were done as per standard reference of Ayurvedic Pharmacopoeia of India.

#### B. Chemical Parameters<sup>[9]</sup>

Acid value, Iodine Value, Saponification Value, Unsaponifiable matter etc. were done for *Arka Taila* as per standard reference of Ayurvedic Pharmacopoeia of India.

#### C. Thin Layer Chromatography<sup>[10]</sup> and High Performance Thin Layer Chromatography (HPTLC)<sup>[11]</sup>

was done for the detection of active principles and marker compounds.

## OBSERVATIONS AND DISCUSSION

Quality assurance is an integral part of all systems of medicine to ensure the quality medicament. Various multidisciplinary and analytical approaches such as development of SOP, preliminary phytochemical and physicochemical evaluation, chromatographic evaluation etc., have been employed and reported for the scientific evaluation of various traditional formulations. In the present research work, only suitable and available techniques were selected for the quality evaluation of *Arka Taila*.

Qualitative tests are used to detect the presence of some major phytochemicals which play a very important role in the expression of biological activity.

Various Physical and Chemical Parameters were analyzed for Arka Taila.

**Estimation of microbial load**

Estimation of microbial load was done and no microbial organisms were found in the drug.

As far as physical and chemical parameters concern, following results were found,

**Table 3: Showing the values for Physical Parameters**

No.	Parameters	Obtained Value
1.	Specific Gravity	1.04061
2.	Refractive Index	1.479
3.	Loss on drying	2.2% w/w

**Table 4: Showing the values for Chemical Parameters**

No.	Parameters	Obtained Value
1.	Acid value	5.4988
2.	Iodine Value	69.25%
3.	Saponification Value	171.14857
4.	Unsaponified matter	2.4175

**Thin Layer Chromatography**

**Rf. Value**

Measure and record the distance of each spot from the point of its application and calculated the Rf. value by dividing the distance travelled by the spots by the distance travelled by the front of the mobile phase. Total number of obtained spots were 5. Rf. value was found as below. Results of TLC and HPTLC indicates presence of secondary metabolites of Arka

(*Calotropis procera*) and Haridra (*Curcuma longa*) in finished product Arka Taila.

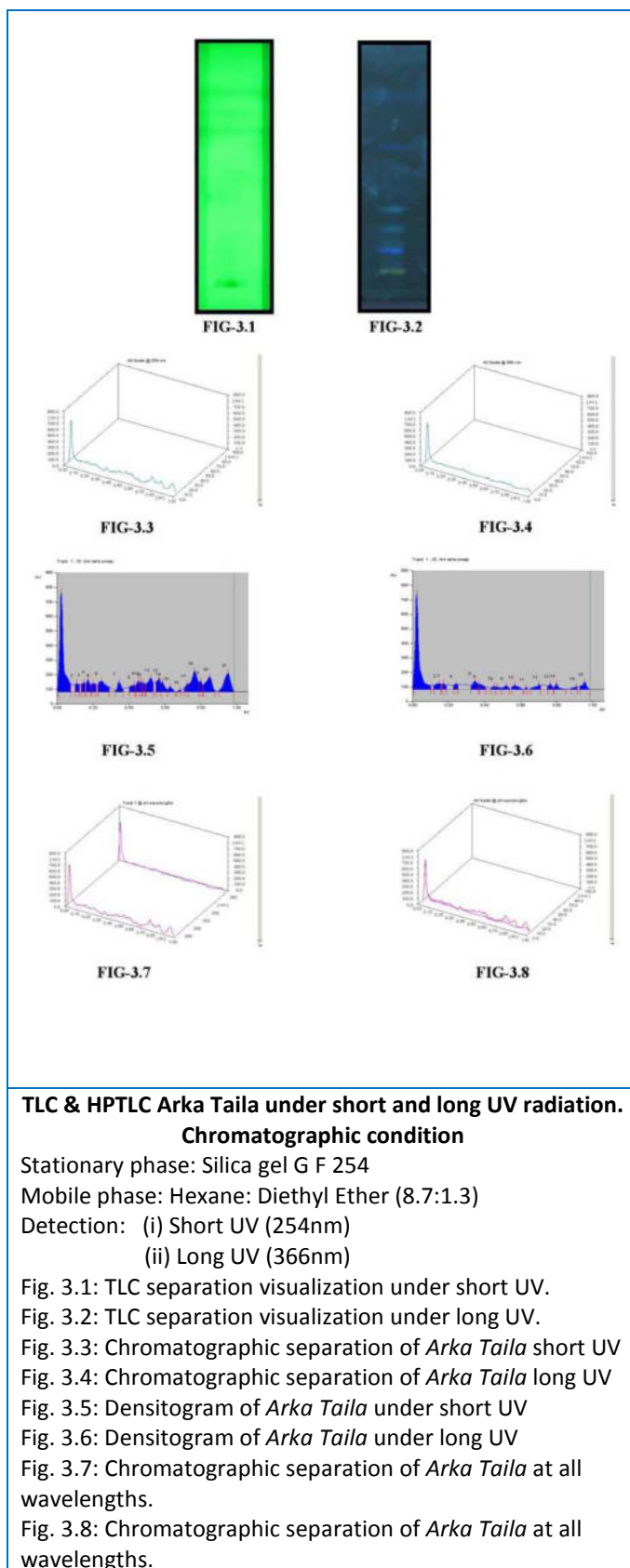


Table 5: TLC observed under UV light

Solvent system	No. of spots	Observed under long UV (366nm) Rf. value	After spray with 10% H <sub>2</sub> SO <sub>4</sub> in Methanol
Hexen : Diethyle Ether (8.7 : 1.3)	5	0.11	0.11
		0.25	0.25
		0.38	0.38
		0.50	0.66
		0.66	-

### High Performance Thin Layer Chromatography (HPTLC)

Table 6: HPTLC observed under UV

Solvent system	No. of spots	Observed under long UV (366nm) Rf. Value
Hexen : Diethyle Ether (8.7 : 1.3)	6	0.05
		0.11
		0.25
		0.33
		0.40

### CONCLUSION

It can be concluded that the analytical approaches used in the present study is useful in the quality control and standardization of *Arka Taila*. As *Arka Taila* contains a wide range of phytochemical components, it is needed to validate its therapeutic utility through clinical studies on larger sample.

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