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Preliminary Analytical Study of Vajigandhadi Tailam – An Ayurvedic Polyherbal Formulation

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Abstract: *Vajigandhadi eranda tailam is a polyherbal formulation mentioned in the classical text Yogaratnakara. It is a yoga which is not much popular in common practice. It is mainly indicated in the clinical condition Gridhrasi. It is a taila preparation containing 12 drugs vajigandha, bala ,vilwa, kasmari, tarkari, patala, dunduka,saliparni, prsniparni, brhati, kantakari and, gokshura.with eranda taila as base.*

Quality is the totality of features and characteristics of product of service that bear on its ability to satisfy a given need.

If an herbal remedy is effective, quality assurance is needed to ensure that the product has the expected effects. Even in the absence of data on efficacy, quality assurance is important, as quality is a critical determinant as well.

Quality of a product is a very hot topic now a days, and especially in the pharmaceutical industry. The segment of herbal medicinal products is of no exception. Indeed, the regulatory authorities have paid special attention to quality in this particular industry, due to the high risk of damage to life and health of patients possible, and developed many guidelines to insure a sufficient level of quality.

9 peaks are obtained in hptlc of vajigandhadi eranda tailam with one major peak with RF value 0.71. This study is sufficient enough to show that how much quality is ensured by the product.

Keywords*: Vajigandhadi eranda tailam, gridhrasi, sciatica, chromatography*

1. INTRODUCTION

Ayurveda is the ancient Indian system of natural and holistic medicine. When translated from Sanskrit, Ayurveda means “the science of life” (the Sanskrit root ayur means “longevity” or “life” and veda means “science”). Ayurvedic medicine uses a variety of products and practices. Ayurvedic products are made either of herbs only or a combination of herbs, metals, minerals, or other materials in an Ayurvedic practice called *rasa shastra*. Some of these **products may be harmful if used improperly or without the direction of a trained practitioner**.

Ayurveda represents the ancient Indian art of healing. In it, the human body is not considered just as a mass of organs, systems and tissues; but the complex mechanism' of myriad functions taking place, both at physical and mental level, are evaluated and described. In existence for thousands of years now, the basic principle of Ayurveda has managed to remain the same. The human body is more complex than any other form of life as on date. Purusha - the human body is the aggregate of 25 elements, together with Atma - the spirit or soul. In order to explain the functional complexity of human body, Ayurveda has propounded a few basic doctrines. These doctrines visualize the functional units of the body to be formed by three Dosha (humours), seven Dhatu (tissues) and Mala (metabolic end products) which are in equilibrium.

The treatment in Ayurveda is decided based on the basis of dosha aggravation and level of dhatu and mala vitiation. There are various kalpanas for administration of medicines in Ayurveda like swarasa

kalpana, churna kalpana, kwatha kalpana, sneha kalpana, gutika kalpana, avaleha kalpana, arishtasava kalpana etc,. Vajigandhadi tailam [1]is a medicine prepared in the form of taila kalpana. It is mentioned in Yogaratnakara and is not a common formulation among clinical practitioners of Ayurveda. Its indication is only for the vataroga-gridhrasi for panam and vasti. Gridhrasi[2] is correlated with the modern clinical condition 'Sciatica'. Sciatica[3] is a name given to pain in the area of distribution of the sciatic nerve (L4 to S3), which is commonly felt in the buttock and over the posterolateral aspects of the leg.

Absence of statutory standards and controls of the authorities made it easier to procure license for manufacturing and sale of Ayurveda medicines. On one hand, one could see an increase in the turnover of Ayurveda industries, the other side, number of generic Ayurveda medicines disappeared from the market or came in short supply. Ayurveda was written thousands years back using the parameters of those time, which may appear quite crude in comparison to the modern age scientific parameters. We live in an era when sophisticated and advanced technologies are easily available to us. Ayurveda drug manufacturers should make use of these technologies in the further development of the existing formulations.

Even though specific parameters are available in the Ayurvedic classics it is necessary to evaluate their safety and efficacy through modern parameters. Keeping this in view, the CCRAS committee has set specific criteria for specific dosage forms[4] .Here an attempt has been made to study vajigandhadi tailam analytically and to develop fingerprints of High-Performance Thin Layer Chromatography study (HPTLC).

2. MATERIALS AND METHODS

Collection of raw drugs: All the individual drugs of the compound drugs of the formulation Vajigandhadi tailam were bought from the local markets of Changanacherry, Kottayam Dist of kerala and they were authenticated in the department of Dravyaguna, Amrita School of Ayurveda, Kollam, Kerala.

Pharmaceutical study: Vajigandhadi tailam was prepared with the ratio mentioned in Table 1 at Department of Rasashastra and Bhaishajya Kalpana, Amrita School Of Ayurveda, Kollam, Kerala.

3. METHOD OF PREPARATION

After the identification of the drug, drugs were washed and dried properly. Since kasaya dravyas and kalka dravyas are not mentioned separately the same drugs in the proportion mentioned as below is to be used. The drugs *Aswagandha, Bala, Vilwam* and *Dasamoolam(10 drugs as 1part)*are taken in the same proportion for kalkam and kwatham. The ingredients of vajigandhadi tailam is in the below table

Sl.no:	DRAVYA	BOTANICAL NAME
1	ASHWAGANDAM	Withania somnifera Linn.
2	BALA	Sida cordifolia Linn.
3	VILWA	Aegel marmelos Linn.
4	AGNIMANTHA	Premna serratifolia Linn
5	SYONAKA	Oroxylum indicum Linn.
6	KASHMARI	Gmelina arborea Linn.
7	PATALA	Stereospermum sauvealens
8	KANTAKARI	Solanum xanthocarpum
9	BRIHATI	Solanum indicum linn
10	SALAPARNI	Pseudarthria viscid Linn.
11	PRISHNIPARNI	Desmodium gangeticum Linn.
12	GOKSHURAM	Tribulus terrestris Linn.
13	ERANDA TAILA	Ricinus communis

The kalkam, tailam and kwatham for preparation of Vajigandhadi tailam were taken in the proportion 1: 4 : 16 as per classical reference.[5]

3.1. Preparation of Kalkam

For the preparation of kalkam the drugs *Aswagandha, Bala, Vilwam* and *Dasamoolam(10 drugs as 1part)*are taken in equal proportion washed, dried and fine powdered. Then it was grinded for half hour using a motorized grinder.

3.2. Preparation of Kwatha[6]

For the preparation of kwatham the drugs *Aswagandha, Bala, Vilwam* and *Dasamoolam(10 drugs as 1part)*are taken in equal proportion. To this 8 times water was added and then boiled in low flame to reduce it to 1/4th of total water.

3.3. Tailam

Shudha eranda tailam available in the market was taken.

The indication of *Vajigandhadi tailam* is for paanam and vasti. The sneha paakam for vasti and paanam is *chikkana (madhyama)paakam.*

3.4. Preparation of Tailam

As mentioned before the proportion of *kalkam, tailam and kwatham* taken were 1:4:16. The prepared kalkam and kwatham was kept aside. Sudha eranda tailam was measured and poured into a brass vessel with thick base on medium flame .The kwatham and kalkam was also trasfered into the vessel and the mixture was boiled in medium flame with continuous stirring and monitoring of paakam. The boiling was stopped and the oil was filtered using a washed and dried white filter cloth when chikkana paanam was attained.

4. ANALYTICAL STUDY

The Analytical study deals with the physical and chemical evaluation of the given formulation carried out at R&D unit of Aryavaidya sala Kottakkal. Organoleptic parameters, Physico-chemical analysis were carried out by following standard procedure mentioned in Ayurvedic Pharmacopeia of India. Various organoleptical parameters of the formulation, such as colour, odour and taste of the tailam were recorded. In physical evaluation the tailam was found to be light brown in colour,acid value is 2.5,with an iodine value of 91.09, saponification value of 189.76 and refractive index of 1.472 were determined

4.1. Heavy Metal Analysis

The pharmacological laboratary for indian medicine, Ghaziabad have set a standards for the presence of various heavy metal contents in various ayurvedic medicine. This taila had all the heavy metals below detectable limits.(table no: 1)

4.2. High Performance Thin Layer Chromatography (HPTLC)

Studies were carried out with solvent system toluene:ethyl acetate: Formic acid: Methanol (7:3:1:0.5)). CAMAG HPTLC system equipped with a sample applicator Linomat 5 sample applicator was used for application of samples.

CAMAG TLC Scanner 3, Reprostar and Wincats 4.02 were used for scanning the plates. CAMAG twin through glass chamber was used for developing the plates. The sample Vajiganghadi tailam (10 ml) was extracted with 10 ml methanoland spotted as as 5 microlitres for 1 hr. under reflux.

Theplates were developed in mobile phase of Toluene: Ethyl acetate:Formic acid:Methanol(7:5:1:0.5) and scanned at 254 nm. *9 peaks are obtained in hptlc of vajigandhadi eranda tailam with one major peak with RF value 0.71.*

TEST RESULTS (Table 1)

SL NO	TEST PARAMETER	UNIT	RESULT	STANDARD
O1	Description	-	Light brown oil	-
02	LOD	%W/W	0.41	-
03	ACID VALUE	-	2.5	-
04	IODINE VALUE		91.09	
05	SAPONIFICATION VALUE		189.76	
06	REFRACTIVE INDEX		1.472	
07	HEAVY METAL CONTENT			
	a) LEAD	Ppm	BDL	NMT 10
	b) ARSENIC	Ppm	BDL	NMT 3
	c) CADMIUM	Ppm	BDL	NMT 0.3
	d) MERCURY	Ppm	BDL	NMT 1

5. HPTLC Analysis of Vajigandhadi Tailam

A. Sample Details

01. Vajigandhadi tailam (Vasti & Pana pakam)

Ref: Yogaratnakaram

B. HPTLC Conditions

01. 10 ml Vajigandhadi tailam sample is extracted with 10ml methanol and spotted as 5 microlitre.

C. Stationary Phase

Merk, 1.05554.0007, TLC Silica gel 60 $F_{254,}$ 10x10 cm Aluminium sheet.

D. Mobile Phase

Toluene: Ethyl acetate: Formic acid: Methanol (7:5:1:0.5)

E. Development

CAMAG 10 x 10 cm Twin trough chamber.

F. HPTLC Instrumentation

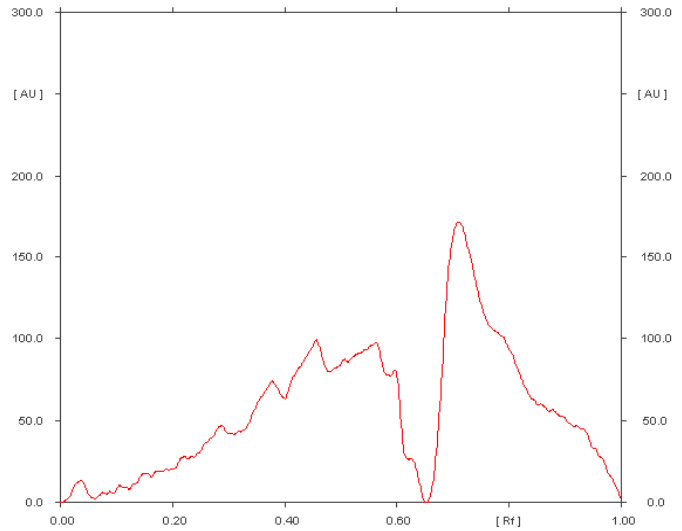
CAMAG Linomat 5, CAMAG TLC Scanner 3, CAMAG Reprostar 3

G. Derivatization

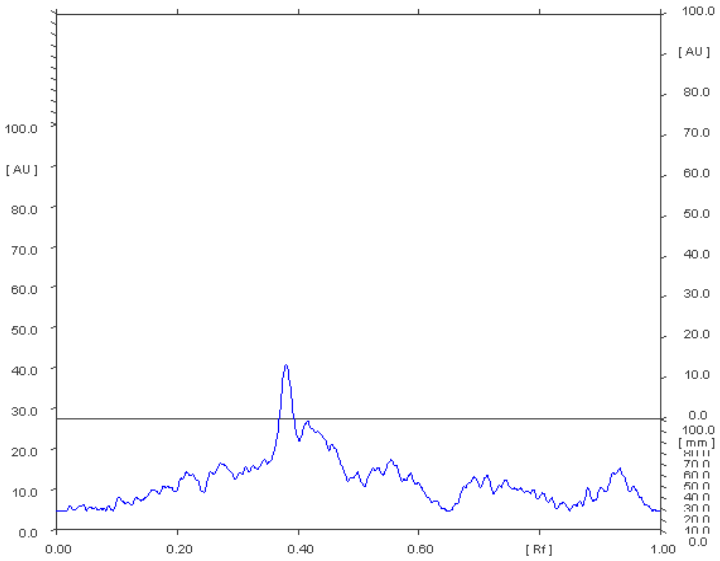
10% sulphuric acid reagent

H. Results

01. Overview Graph of Vajigandhadi Tailam Sample At 254nm

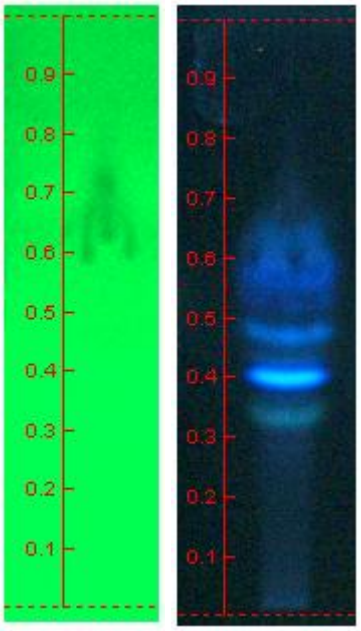


02. Overview Graph of Vajigandhadi Tailam Sample AT 366nm

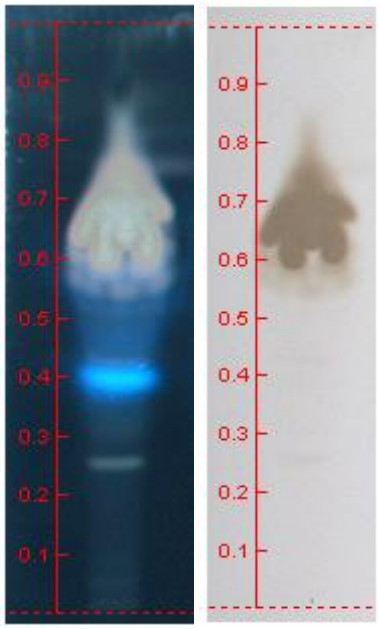


03. TLC Plate Views of Vajigandhadi Tailam Sample

AT 254nm AT 366nm



Derivatization Derivatization



AT 366nm AT White Light

04. Area&Peaks of Vajigandhadi Tailam Sample AT 254nm

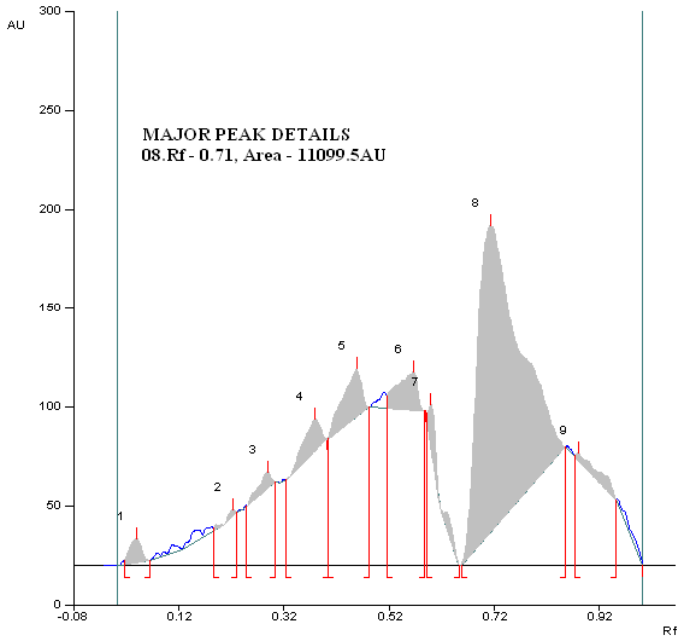
Vajigandhadi tailam Peak no	Vajigandhadi tailam Area(AU)
1	**249.9**
2	**53.9**
3	**186.8**
4	**486.4**
5	**808.6**
6	**672.4**
7	**396.2**
8	**11099.5**
9	**273.4**

Vajigandhadi Tailam Sample

01. TOTAL PEAK NO – 09

02. TOTAL AREA – 14227.1 (AU)

05. Major Peak Details of Vajigandhadi Tailam Sample AT 254nm



6. DISCUSSION

Herbal medicines are generally considered comparably safer than synthetic drugs. While this may be probably correct, case reports show that severe side effects and relevant interactions with other drugs can occur. Lack of regulatory standards regarding the efficacy and safety of herbal products did not arouse much concern in the past, as these products were often perceived as so safe that even if they were ineffective, little harm resulted. However, the situation is changing now and there is increasing body of literature on th side effects and interactions of herbal medicines. Besides the direct risks of adverse effects and drug interactions there is an indirect risk that an herbal remedy without demonstrated efficacy may compromise, delay, or replace an effective form of conventional treatment.

pH shows Vajigandhadi tailam is acidic in nature. Heavy metal content are also not exceeding the safe limits.

7. CONCLUSION

Following good evaluation practice in herbal medicine is an effective strategy in achieving health for all. Good evaluation practice is the right evaluation at the right time, with the right investigators conducted with the highest ethical standards.

A strong commitment is required from the research community to follow good evaluation practice and to provide quality information about herbal medicine to the public and health professionals. rigorous quality research is needed to support the claims of herbal medicine for the benefit of mankind. Today, this evaluation process is contributed from the collective technical expertise in several diverse areas, including ethnobotany and ethopharmacology, classical botanical pharmacognosy, natural products chemistry, phytochemistry, analytical pharmacognosy, phytotherapy and clinical pharmacy.

Achieving complete and wholesome standardization of evaluation of herbal formulations is the need of the hour and its implementation will be a historic leap towards India's health security.

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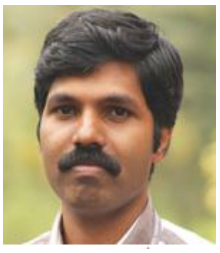

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