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**<u>Research Article</u>** 

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# PHARMACOGNOSTICAL AND PHARMACEUTICAL EVALUATION OF POLYHERBAL FORMULATION *ERANDADI VATI*

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# ABSTRACT

Evaluation of herbal formulation is important in order to evaluate the quality, purity, safety and efficacy of drugs built on quantity of their active principles. The purpose of the present work is standardization of *Erandadi Vati*. It is polyherbal preparation containing three components. The *Erandadi Vati* is cited in the ancient books of Ayurveda used for the treatment of *Amavata* (Rheumatoid arthritis). *Erandadi Vati* was prepared to evaluate the organoleptic characters, pharmacognostical study and physicochemical parameters. Outcomes of the study is helpful in standardization of polyherbal ayurvedic formulation *Erandadi Vati*, which will help worldwide acceptance of

the formulation and standing of the Ayurveda system.

KEYWORDS: Amavata, Erandadi Vati, Pharmacognosy, Pharmaceutics, Standarization.

# INTRODUCTION

According to Ayurveda *Amavata* word is composed of two words "*Ama*" and "*Vata*". In terms of *Ayurveda* '*Ama*' means undigested *Ahara Rasa* due to *Mandagni*. According to *Madhav Nidana, Ama* carried by vitiated *Vayu* travels throughout the body and accumulates in the joints at weaker side *Amavata* occurs.<sup>[1]</sup> Principal of treatment on *Amavata* in Chakradatta is very simple. In which Chakradatta said, *Langhana, Svedana, tiktarasa dravya, deepaniya dravya, katu rasa dravyas, Virechana Karma, snehapana* and administration of

*Basti* are prescribed in the treatment of *Amavata. Saindhavadi Anuvasana Basti* followed by *Kshara Basti* is also recommended in *Amavata*. Food and drinks processed with *Panchakola* are beneficial in *Amavata. Ruksha sveda* should be applied with sand pouches in *Amavata*.<sup>[2]</sup> Looking into the above fact, it can be said that the drug having *Amapachana, Deepana, Vatahar, Shothahara, Vedanahara* properties can be the choice of drugs for the management of Rheumatoid Arthritis. Hence, *Eranda bijamajja* mainly containing *Ushna, Deepana, Vatahara, Shulahara* properties and *Sunthi* also has *Shothahara, Amavataghni, Pachani* properties. Drug mentioned in *Bhaavprakasha* and indicated in *Amavata*. So it has been selected for the study.<sup>[3]</sup> In the present study, the formulation is subjected to pharmacognostical and pharmaceutical analysis to standardize the finished product *Erandadi Vati* were verified and all the ingredients were proved to be authentic.

# MATERIALS AND METHODS

### **Drug Material**

Raw drug material were collected from the pharmacy of Gujarat Ayurved University and local market of Jamnagar.

Tab	le 1:	These are	the ingre	dients and	part used	of Erandadi	i <b>vati.</b> [4]

No.	Name & Latin name	Part used	Proportion
1	Eranda- Ricinus communis	Erand bijmajja-Seed	Equal(1part)
2	Sunthi- Zingiber officinale	Kanda-Rhizome	Equal(1part)
3	Sharkara- Sugar	-	Equal(1 part)

# Methods of preparation of Erandadi Vati

All the elements of *Erandadi Vati* were taken and first into *Churna* and *Kalka* was ready. For the determination of binding 10% gum acacia was mixed in this mixture. Then this combination was transformed into granules by using the granular machine. Lastly, 500 mg tablets were made in tablet making machine.

# Pharmacognostical study

Raw drugs were recognised and authenticated by the pharmacognosy laboratory, IPGT & RA., jamnagar. The identification was carried out based on the morphological structures, organoleptic features and powder microscopy of the individual drug. Later, pharmacognostical evaluation of the tablets were carried out. Tablet was liquefy in small quantity of distilled water, filtered through filter paper and studied under the microscope

attached with camera, with stain and without stain. Microphotographs were taken by using Carl Zeiss binocular microscope attached with camera.<sup>[5]</sup>

### **Physicochemical evaluation**

*Erandadi Vati* was analysed by using standard qualitative and quantitative parameters, HPTLC was carried out after making suitable solvent system with methanolic extract of *Erandadi Vati* at the pharmaceutical chemistry lab, IPGT & RA. Gujarat ayurved university, Jamnagar.<sup>[6]</sup>

#### **OBSERVATION AND RESULTS**

#### **Organoleptic evaluation**

The Organoleptic characters are very important and give the general idea regarding the gentility of the sample. It is done with the help of *Panchagyanendriya Pariksha/* sense organs. Various parameters such as colour, odour, taste, touch and texture of the finished product were observed and recorded.<sup>[7]</sup>

Parameters	Results	
Colour	Light Brown	
Odour	Sweet	
Taste	Sweet pungent	
Texture	Solid	
Touch	Hard but compressibleby press	

#### Table 2: Organoleptic evaluation of Erandadi Vati.

#### **Microscopic study**

The powder microscopy of *Erandadi Vati* established the structures of oleoresine content of *Shunthi*, scalariform vesselse of *Shunthi*, Endocarp cells of *Eranda*, Mesocarp cells of *Eranda*, silica deposition, iodine stained starch grains of *Shunthi*, fibers of *Shunthi*, sppol cells of *Eranda*, Oil globules of *Eranda*, Starch grains of *Shunthi*, Cork cells of *Shunthi*, Epicarp cells of *Eranda* ehich are deplicated below.



# Physico-chemical analysis

Physical analysis like shape, size, weight variation, hardness and uniformity of weight were recorded and results are mentioned in the below table.

# Table 3: Physico-chemical analysis of Erandadi Vati.

Parameters	Results
Shape	Round
Size	0.5 cm
Weight variation	4 %
Uniformity	743.55 mg
Hardness	$1.45 \text{ kg/cm}^2$

# **Qualitative analysis**

Physico-chemical analysis were carried out by following the parameters. Physico-chemical analysis like loss on drying, ash value, water soluble extract, alcohol soluble extract were recorded. Results are mentioned in the below table.

No.	Analytical parameter	Results
1	Lose on drying	23.32% W/W
2	Ash Value	1.72 %W/W
3	Water solubllity	44.7 %
4	Alcohol solubility	43.4% W/W

## Table 4: Qualitative analysis of Erandadi Vati.

# High performance thin layer chromatography(HPTLC)

HPTLC was carried out after making suitable solvent system with methanolic extract of *Erandadi Vati*. On performing HPTLC, visual observed tablet under UV light, showed few spots but on analysing under densitometer at 254nm and 366nm it results into 14 and 13 spots respectively. Results og HPTLC and densitogram is given below.

Table 5: R<sub>f</sub> value of *Erandadi Vati*.

254 nm		366 nm	
	0.7		0.7
	0.16		0.13
	0.20		0.27
	0.27	No. of Spots 13	0.41
	0.37		0.43
	0.41		0.49
No. of Spots 14	0.43		0.54
No. of Spots 14	0.49		0.62
	0.59		0.71
	0.67		0.81
	0.71		0.84
	0.75		0.87
	0.81		0.97
	0.84		



Figure No. 01: Densitogram curve of Methanol extract of *Erandad Vati* at 254nm.



Figure No.02: Densitogram curve of Methanol extract of *Erandadi Vati* at 366 nm.

### DISCUSSION

Pharmacognosy and pharmaceutical assessment of polyherbal drug *Erandadi Vati* was performed which is a effective medicine in the management of *Amavata*. In physicochemical analysis, uniformity of tablets, hardness of tablets, loss on drying, ash value, water and alcohol soluble extract were assessed though the important investigation and analysis are essential for the identification of all the active chemical ingredients of the test drug to validate the clinical efficacy.

# CONCLUSION

Pharmacognostical study outcomes approve that all characters were found in ingredient drug of *Erandadi Vati*. The physicochemical analysis is inferred that the formulation meets maximum qualitative standards and all the parameters discussed here may be used as identifying tools for the quality assessment of *Erandadi Vati*. Thus, outcome of the study may be taken as standard refrences groundwork fundamentals for the present study, additional for the further studies.

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