

## Phyto-chemical and pharmacognostical evaluation of *Rasayana yoga vati*- An Ayurvedic Multi-herbal formulation

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**Abstract:** *Rasayana Yoga Vati* is *Anubhut* (well established) drug against Allergic condition in various eye disorders. There has been an increase in demand for the Phyto-pharmaceutical products of Ayurveda for standardization and to maintain the genericity of particular drug. The Phyto-chemical research approach is considered effecting in Discovery Bio active profile of the Study Drug for the therapeutic importance. Pharmacognosy is in need for Identification and Characterisation of a drug moreover it helps in developing Pharmacopoeial standards and for authentication of drug material of various formulation in which these drugs are used by knowing morphological characters of the herbal drugs. So, a new pharmaceutical preparation in the form of *Rasayana Yoga Vati* tried to standardize which is a classical drug formulation. The present study deals with the Pharmacognostical and Phyto-chemical evaluation of *Rasayana Yoga Vati*. Pharmacognostical study containing both macroscopic and powder microscopy of raw drugs revealed the identity, quality and purity of all the constituents of *Rasayana Yoga Vati*. Pharmacognostical and phyto-chemical observations revealed the specific characters of all active constituents used in the preparation. The presence of oil globules, endosperm fragments, pollen grain cork cells were the characteristic features observed in the microscopy of drug combination. The pH of *Rasayana Yoga Vati* found 5.5, Ash value 13.58 % w/w and Loss on drying 9.25% w/w.

**Key Words:** HPTLC, Pharmaceutics Pharmacognosy, *Rasayana Yoga Vati*.

### 1. INTRODUCTION:

*Rasayana Yoga Vati* is a multi-herbal compound of Ayurveda. Many clinical studies suggest these drugs having anti-allergic property and improve immunity.<sup>1</sup> Till date there is no research work had not been published on *Rasayana Yoga Vati*, hence present study deals with the pharmacognostical and Phyto-chemical analysis. Phyto-chemical analysis gives information about chemically constituents which may be active or inactive form. Several Phyto-chemical surveys have been carried on for detecting Diverse group of naturally occurring Phyto-chemicals. The Phyto-chemical research approach is considered effecting in Discovery Bio active profile of the Study Drug for the therapeutic importance. Need for Pharmacognosy study is getting wide to know about identification of new drug candidates derived for the natural source, easy availability of drugs and their low cost. And to know the presence of toxic material within the formulation or its minimal interaction with herbal formulation. Pharmacognosy study seriousness has markedly increased due to adulteration by the vendors thus drastically decreasing the quality of the raw material which were used in the manufacture of the crude drug. Hence it is essential to innovate and develop tools that can help in the proper identification of the medicinal drug. The present paper tries to highlight its importance of *Rasayana Yoga Vati*.

### 2. MATERIALS AND METHODS:

#### 2.1. Collection, Identification and Authentication of raw drugs:

The raw drugs for the study were procured form the Pharmacy of Gujarat Ayurveda University. The ingredients & parts used in the preparation of the final product are listed in the Table 1. The ingredients were identified and authenticated in the Pharmacognosy Laboratory, I.T.R.A., Jamnagar, Gujarat.

**Table 1: Ingredients of *Rasayana Yoga Vati* are as follow: (*Anubhuta*).**

SR. NO.	Name of Drug	Latin name	Parts used	Proportion
1.	<i>Arogyvardhini Rasa</i>	<i>Su. Parada</i>		1 Part
		<i>Su. Gandhaka</i>		1 Part
		<i>Loha Bhasma</i>		1 Part

		<i>Abhrak Bhasma</i>			1 Part
		<i>Tamra Bhasma</i>			1 Part
		<i>Haritaki</i>	<i>Terminalia Chebula</i> Retz	Fruit	2 Part
		<i>Bibhitaki</i>	<i>Terminalia bellirica</i> Roxb.	Fruit	2 Part
		<i>Amlaki</i>	<i>Phyllanthus Emblica</i> Linn	Fruit	2 Part
		<i>Su. Shilajitu</i>	—	—	3 Part
		<i>Guggulu</i>	<i>Commiphora Mukul</i> Engl.	Resin	4 Part
		<i>Chitrak mula</i>	<i>Plumbago Zeylanica</i> Linn.	Dried Root	4 Part
		<i>Katuki</i>	<i>Picrorhiza kurro</i> Royle ex Benth	Root	22 Part
2.	<i>Amlaki</i>		<i>Phyllanthus Emblica</i> Linn	Fruit	1 Part
3.	<i>Guduchi</i>		<i>Tinospora Cordifolia</i> Willd.	Rhizome	1 Part
4.	<i>Gokshura</i>		<i>Tribulus terrestris</i> Linn	Root	1 Part
5.	<i>Khadira Churna</i>		<i>Acacia catechu</i> Willd	Bark	1 Part
6.	<i>Haridra Churna</i>		<i>Curcuma longa</i> Linn	Rhizome	1 Part

## 2.2. Method of preparation of *Rasayana Yoga Vati*:<sup>ii</sup>:

Equal part of each drug (*Amalaki, Guduchi, Gokshura, Khadira, Haridra*) and 1/8<sup>th</sup> part of *Arogyvardhini Rasa* was taken in a clean vessel under sterile condition.



All the Drugs were made in a fine powder with the help of Pulverizer. After that they are filtered with the helped sieve no. 80. The whole material kept in a clean glass vessel and measured.



A cleaned resin of *Guggulu* added to the powder and then as per the requirement the powder was rolled into *vati* of equal size (500mg each).



### *Rasayana Yoga Vati*

## 2.3. Pharmacognostical Evaluation of *Rasayana Yoga Vati*:

- **Organoleptic Study:** The prepared drug *Rasayana Yoga Vati* was evaluated by organoleptic characters like colour, taste, odor and others as below. (Table 2)<sup>iii</sup>
- **Powder microscopy:** The powders of respective parts of all the ingredients of *Rasayana Yoga Vati* studied separately with and without staining covered with cover slip and observed under the Carl Zeiss Trinocular Microscope. The microphotographs were taken by using Carl Zeiss Trinocular attached with camera at Pharmacognosy Laboratory, I.T. R.A, Jamnagar.
- **Physico-Chemical Analysis of *Rasayana Yoga Vati*** was analyzed by using qualitative and quantitative parameters at Pharmaceutical Chemistry Laboratory. I.T.R.A, Jamnagar<sup>iv</sup>
- **High Performance Thin Layer Chromatography (HPTLC):** Methanol extract of *Rasayana Yoga Vati* was used for High performance thin layer chromatography (HPTLC) study. Extract of *Rasayana Yoga Vati* was spotted on pre-coated silica gel GL60254 aluminum plate as 10mm bands by means of a Camag Linomate V sample applicator fitted with a 100µL Hamilton syringe. Toluene: Ethyl acetate: Acetic acid (7:2:1) was used for *Rasayana Yoga Vati* as a mobile phase. The development time was 30 minutes. After development, Densitometry scanning was performed with a Camag TLC scanner III in reflectance absorbance mode at 254 nm and 366 nm under control of Win CATS software (V1.2.1. Camag). Then the plate was sprayed with Vanillin sulphuric acid followed by heating and then visualized in day light.<sup>v</sup>

## 3. RESULTS AND DISCUSSION:

### 3.1. Pharmacognostical evaluation for organoleptic parameters:

The colour of *Rasayana Yoga Vati* is golden yellow, whereas the taste of *Rasayana Yoga Vati* is bitter and the consistency on touch is Fine. These are all the organoleptic parameters of *Rasayana Yoga Vati* the mentioned in Table 2.

**Table 2: Organoleptic characters of Rasayana Yoga Vati:**

Sr. No	Character	Result
1	Colour	Yellowish grey
2	Odor	Slightly Aromatic
3	Test	Astringent
4	Touch	Hard

**3.2. Powder microscopy:**

In microscopic examination of *Rasayana Yoga Vati* {Plate no.1(fig 1-10)} shows the following:

DRUG NAME	FINDINGS
<i>Amalaki</i>	Silica depositions, Mesocarp cells, Scleroids (fig.1,2&3)
<i>Guduchi</i>	Border pitted vessels, Cork cells (fig.5&6,)
<i>Gokshura,</i>	Trichome (fig. 4)
<i>Haridra</i>	Parenchyma cells, Scalariform vessels (fig.7&8)
<i>Khadira</i>	Tannin content, Crystal fibres (fig.9 &10)

**3.3. Physico-Chemical Analysis:**

Results of physicochemical analysis i.e. loss on drying, ash value, water soluble extract, alcohol soluble extract and pH are shown in Table 3.

**Table 3: Physico-chemical parameters of Rasayana Yoga Vati:**

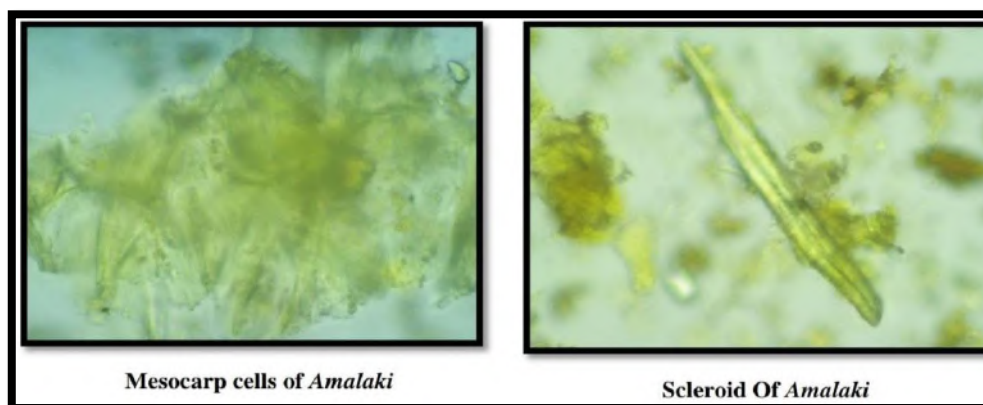
Sr. No	Test	Result
1	Water soluble extract	4% w/w
2	Methanol soluble extract	10% w/w
3	Loss on drying	9.25% w/w
4	Ash value	13.58% w/w
5	pH 5% water aqueous	5.5

**3.4. HPTLC profile of Rasayana Yoga Vati:**

On performing HPTLC, the chromatogram of *Rasayana Yoga Vati* showed 13 spots in short wave UV 254 nm and 13 spots obtained in long wave UV 366 nm. Table 4. (Plate no. 2)

**Table: 4 R<sub>f</sub> values of Rasayana Yoga Vati:**

Sr. No	UV Light	No. of Spot	Max. R <sub>f</sub> Value
1	Short (254nm)	13	0.05,0.07,0.15,0.19,0.23,0.38,0.49,0.57,0.81,0.85,0.91,0.93,0.99
2	Long (366nm)	13	0.05,0.11,0.21,0.26,0.28,0.32,0.37,0.78, 0.88,0.91,0.93,0.95,0.98



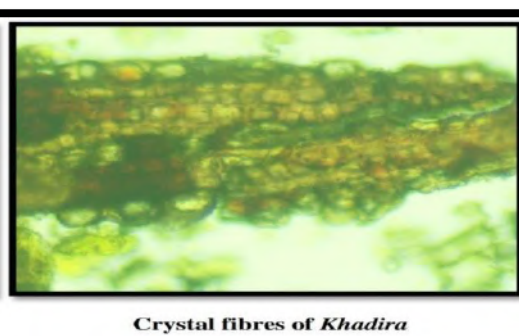
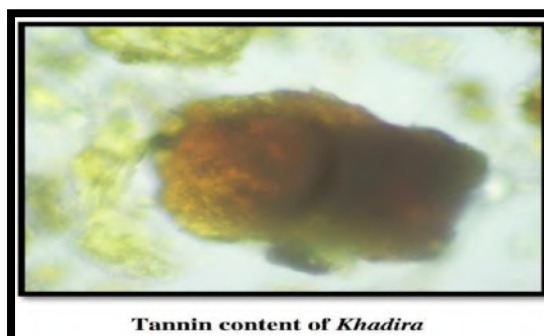
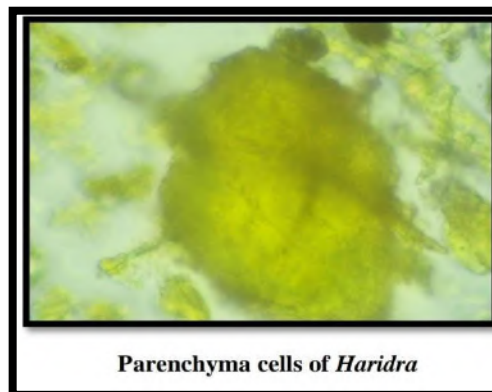
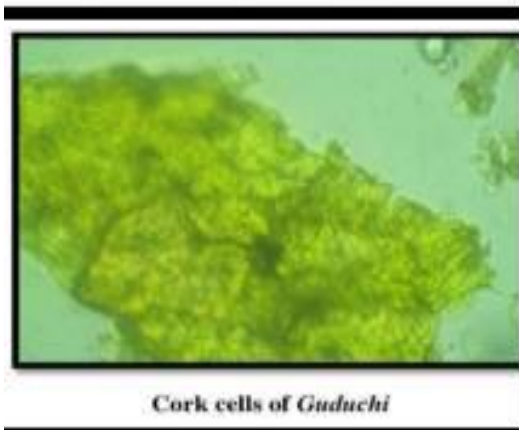
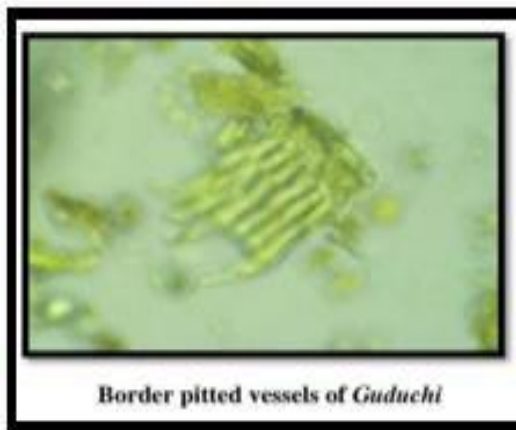
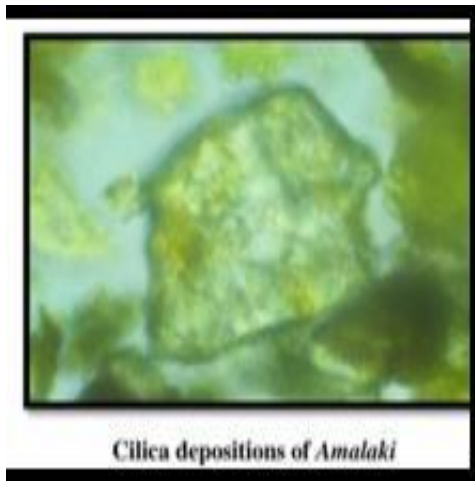
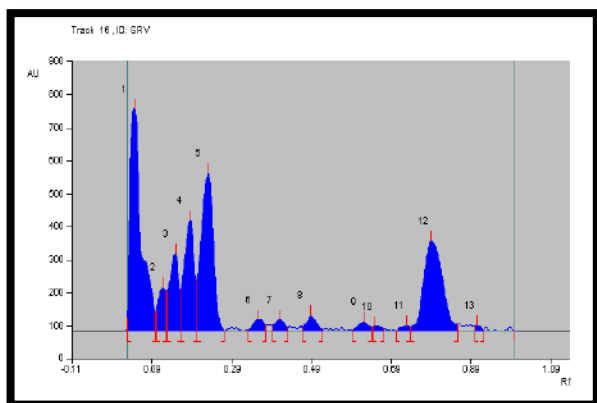
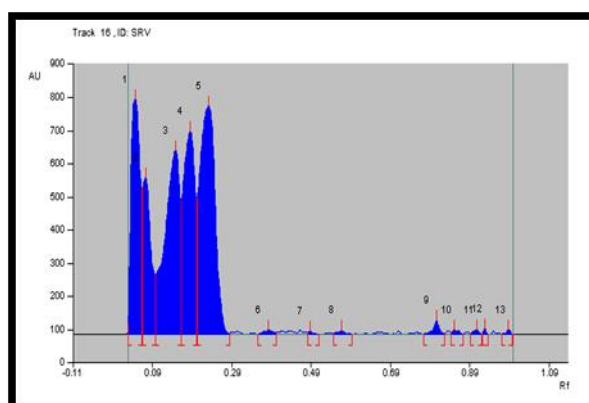


Plate 1: Microphotographs of *Rasayana Yoga Vati*:



Observed under short UV light (254nm)  
*Rasayana Yoga Vati*



Observed under long UV light (366nm)  
*Rasayana Yoga Vati*

Plate 2: HPTLC finger prints at (a) 254nm (b) 366nm:

#### 4. CONCLUSION:

Phytochemical and Pharmacognostical evaluation of *Rasayana Yoga Vati* revealed the identity, quality and purity of all the constituents of *Rasayana Yoga Vati*. Pharmacognostical and phyto-chemical observations illustrated presence of the specific characters of all ingredients which are used the preparation. Preliminary Organoleptic features and results of powder microscopy of the ingredients confirm the gentility and quality of *Rasayana Yoga Vati*. All the ingredients were proved to be authentic. Pharmaceutical Evaluation shows values of *Rasayana Yoga Vati* analyzed were within the normal range. All the results show the quality of the preparation is standard. On the basis of observations made and results of experimental studies, this study may be beneficial for future researchers and can be used as a reference standard in the further quality control research.

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