

**PHARMACOGNOSTICAL AND PHARMACEUTICAL EVALUATION OF RASAYANA  
YOGA- MODIFIED FORM**

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Article Received on 05/03/2017

Article Revised on 22/03/2017

Article Accepted on 12/04/2017

**ABSTRACT**

*Rasayana* treatment is broadly described in *Ayurvedic* classic. It included under the eight main branch of *Astanga Ayurveda*. *Ayurveda* first aim is *Svastyasya Swasthya Rakakshanama* which means maintain the normal physiology of the body then secondary goal is *Aaturasya Vikara Prasamanama* which means equilibrium of the imbalanced system. *Rasayana* therapy helpful to solve the problem of healthful longevity including mental development and resistance against diseases. *Rasayana* refers to the nutrition and its transportation in the body. Such a improved nutrition is claimed to lead to a series secondary attributes like immunity against the diseases and delaying the ageing process. Here *Rasayana Yoga* is given in the condition of Oral Submucous Fibrosis. *Rasayana Yoga* having a contain *Yastimadhu*, *Amalaki*, *Guduchi*, *Gokshura*, and *Haridra*. Pharmacognostical and analytical study has been carried out for the evaluation of its efficacy in the management of *OSMF*. Pharmacognosy study showed that cork cell of *Guduchi*, Parenchyma cells of *Haridra*, Mesocarp cell of *Amalaki* etc. were identified. Analytical study showed 8 spots at 254nm and 8 spots at 366nm.

**KEYWORDS:** *Rasayana*, *Astanga Ayurveda*, *Immunity*, *OSMF*.

**INTRODUCTION**

Oral submucous fibrosis (OSMF) is a chronic disease of oral cavity. Its cardinal feature is progressive in ability to open mouth. It is chronic debilitating disease and there is a nutritional deficiency as an aggravating factor as well as sequel. All this factor favour use of *Rasayana* drugs. Most of the drug in *Rasayana Yoga* are having *Madhura* and *Tikta Rasa*, *Singdha* and *Guru Guna*, *Shita Virya*, *Madhura Vipaka* and *Tidosha Shamaka* and mainly *Vata Pitta Shamaka* Properties. *Madhura Rasa* is *Ropana*, *Snehana*, *Brimhana*, *Balya*, *Preenana*, *Dahashamaka* properties. *Tikta Rasa* is *Ropana*, *Deepana*, *Pachana* properties.<sup>[1]</sup> *Singdha Guna* have *Snehana*, *Brihana*, *Vata Shamaka*.<sup>[2]</sup> *Madhura Vipaka* is *Vata Pitta Shamaka* and *Dhatu Pushtikara*. As well most of the drugs possess immunomodulatory, antioxidant, anti inflammatory, anti ulcerogenic and cancer preventive properties. In classical text this drug compound is not described it's a *Anubhuta Yoga*. In this drug preparation additionally two drug added which is not mentioned in *Rasayana* Chapter and that drug was *Haridra* and *Yastimadhu*. *Haridra* contain curcumin which is strongly anti-inflammatory.<sup>[3]</sup> Curcumin blocks NF-kB, a molecule that travels into the nuclei of cells and turns on genes related to inflammation. NF-kB is believed to play a major role in

many chronic diseases.<sup>[4,5]</sup> Curcumin happens to be a potent antioxidant that can neutralize free radicals due to its chemical structure,<sup>[6,7]</sup> and curcumin also boosts the activity of the body's own antioxidant enzymes.<sup>[8]</sup> *Yastimadhu* also having ulcer healing properties and anti oxidant activity.<sup>[9]</sup> Till date there is no reference regarding its evaluation, present paper drug is evaluated through Pharmacognostical and phytochemical analysis.

**MATERIALS AND METHOD**

All the raw drugs of *Rasayana Yoga* were obtained from the pharmacy of Gujarat Ayurved University, Jamnagar. The ingredients and parts used in the preparation of the final products are listed in Table No.<sup>[1]</sup>

**PREPARATION OF THE DRUG**

Drug was prepared in the pharmacy of Gujarat Ayurved University, Jamnagar.

**PHARMACOGNOSTICAL STUDY**

Pharmacognostical study carried out under two step. Organoleptic study and powder microscopy.

### Organoleptic Study

Organoleptic study can be done by sense organ which provide simplest and quickest means to establish identity of a particular drug. The raw drugs and its powder separately evaluated by organoleptic features like taste, odor, color and touch. Powder characteristics of the sample were identified with the help of Pharmacognosy laboratory, I.P.G.T & R.A., Gujarat Ayurved University, Jamnagar.<sup>[10]</sup>

### Powder microscopy

Powder of the drug was studied microscopically and microscopy characters of the powder were drawn.<sup>[11]</sup>

### Physico-chemical analysis

*Rasayana Yoga* was analyzed by various physico-chemical parameters like: loss on drying, water soluble extract, alcohol soluble extract etc.<sup>[12]</sup>

### High performance thin layer chromatography

HPTLC was performed as per the guide line provided by API. Methenolic extract of drug sample used for spotting. HPTLC was performed using Toluene + Ethylacetate + Acetic acid(14:4:2) solvent system and observed under visible light. The color and  $R_f$  values of resolved spot were noted.<sup>[13]</sup>

## OBSERVATIONS AND RESULTS

### Organoleptic characters of *Rasayana Yoga*

Organoleptic characters of *Rasayana Yoga* such as a color, odor, taste etc. examined by the sensory organs and results were shown in Table No.2.

**Table 1: Ingredients of *Rasayana Yoga* [Anubhuta]**

Sr. No.	Name Of The Drug	Botanical/Latine Name	Part used	Part
1	<i>Guduchi</i>	<i>Tinospora Cordilifolia</i> Miere	Root	1
2	<i>Gokshura</i>	<i>Tribulus Terrestris</i> Linn.	Fruit	1
3	<i>Amalaki</i>	<i>Embelika Officinalis</i> Gaertn.	Fruit	1
4	<i>Yastimadhu</i>	<i>Glycyrriza Glabra</i> Linn.	Root	1
5	<i>Haridra</i>	<i>Curcuma Longa</i> Linn.	Rhizome	½

**Table 2: Organoleptic characters of *Rasayana Yoga* [Anubhuta]**

S.No.	Character	Results
1	Color	Yellowish
2	Odor	Charecristic
3	Taste	<i>Madhura-Tikta</i>
4	Touch	Fine

**Table 3: Physicochemical parameter of *Rasayana Yoga* [Anubhuta]**

S.NO.	Analytical Parameters	<i>Rasayana Yoga</i>
1.	Loss On Drying	8.035% W/W
2.	Ash Value	9.38% W/W
3.	Water Soluble Extract	18% W/W
4.	Methanol Soluble Extract	11.12% W/W
5.	$P^H$ (By $P^H$ Paper)	4.5
6.	<b>Partical Size</b>	
	Above 60 Mesh	4.26%
	Between 60-85 Mesh	6.64%
	Between 85-120 Mesh	73.95%
	Below 120 Mesh	14.05%

### Microscopic characters of *Rasayana Yoga*

Diagnostic characters of *Rasayana Yoga* was observed under microscope and presence of all ingredient shows their different characters. Starch grain of *Guduchi*, lignified border pitted vessel of *Guduchi*, lignified collenchymas cell of *Guduchi*, cork cell of *Guduchi*, border pitted vessel of *Guduchi*, Trichome of *Gokshura*, stratified fibres of *Gokshura*, Lignified stratified fibres of *Gokshura*, mesocarp cell of *Amalaki*, silica deposition of *Amalaki*, crystal fibers of *Yastimadhu*, lignified scleroids of *Yastimadhu*, pitted vessel of *Yastimadhu*, prismatic crystal of *Yastimadhu*, stone cells of *Yastimadhu*, scalariform vessel of *Haridra* [plate 1 fig-19].

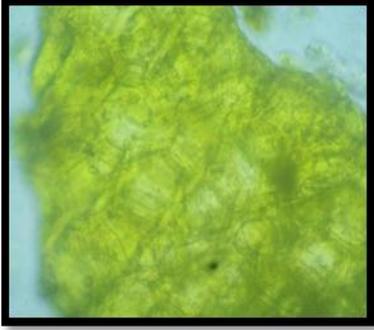
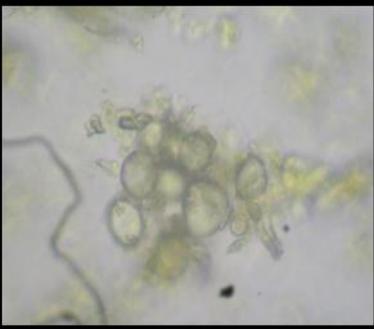
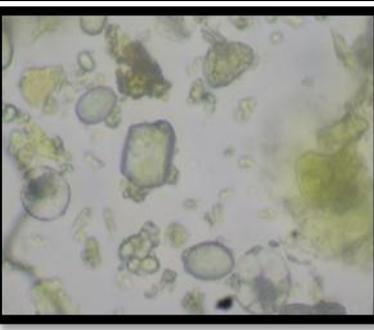
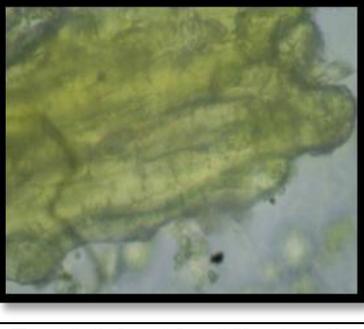
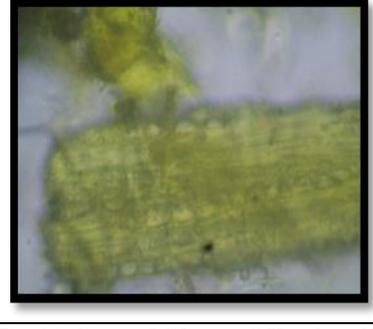
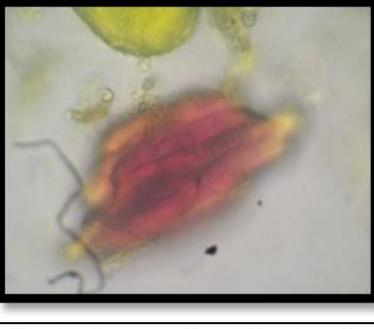
### Physicochemical parameters of *Rasayana Yoga*

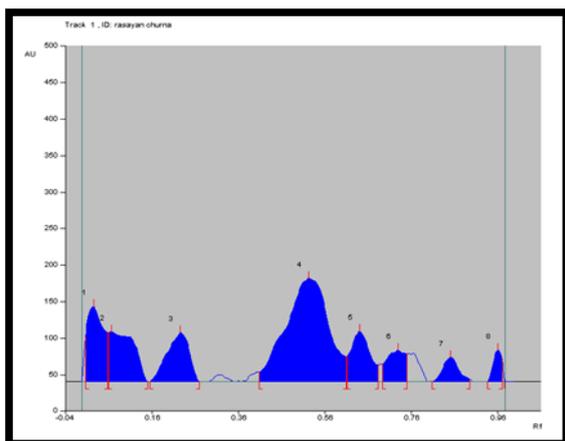
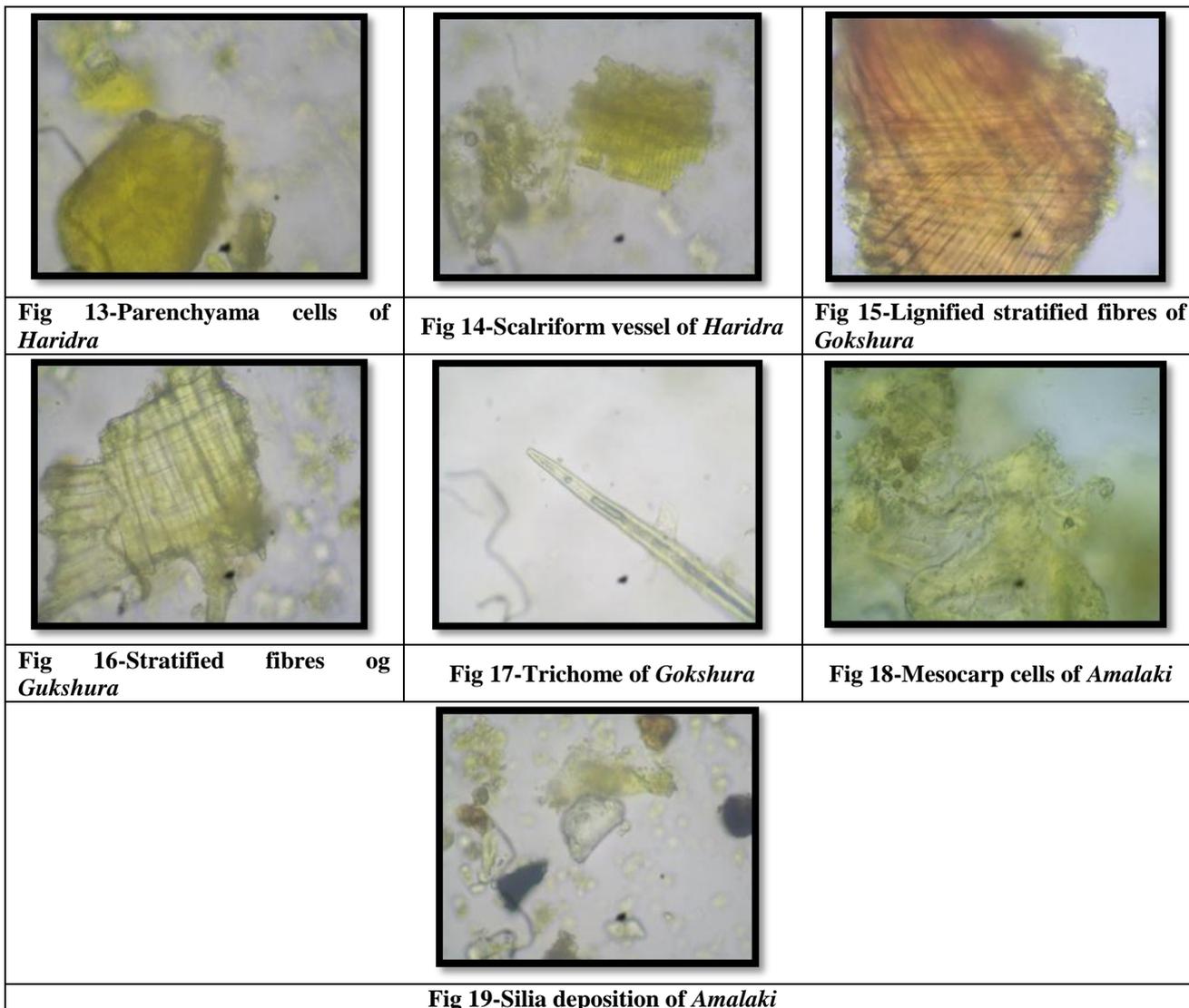
Physicochemical parameters of *Rasayana Yoga* as Ash value, Water soluble extracts, alcohol soluble extracts, and pH etc. results are shown in Table 3.

### HPTLC study

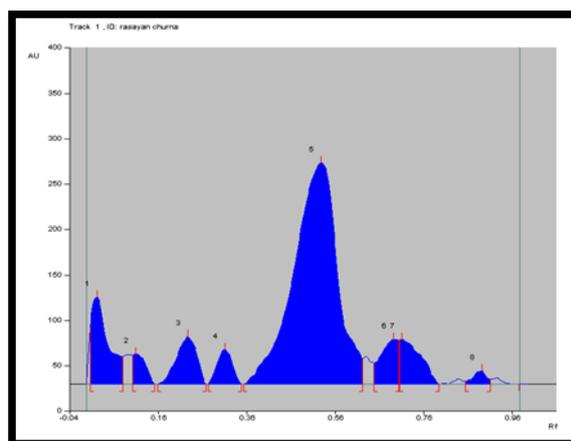
Chromatogram shows 8 prominent spots at 254nm with maximum  $R_f$  value 0.02, 0.11, 0.16, 0.42, 0.47, 0.57, 0.68, 0.93 And 8 spots at 366nm with maximum  $R_f$  value 0.01, 0.10, 0.16, 0.28, 0.36, 0.65, 0.71, 0.86.[plate 2 fig 1-2].

**Plate: 1. Powder Microscopy of Rasayana Yoga**

		
<p><b>Fig 1- Border pitted vessels of Guduchi</b></p>	<p><b>Fig 2-Collenchymas cells of Guduchi</b></p>	<p><b>Fig 3-Cork cells of Guduchi</b></p>
		
<p><b>Fig 4-Lignified border of pitted vessel of Guduchi</b></p>	<p><b>Fig 5-Lignified collenchymas cells of Guduchi</b></p>	<p><b>Fig 6-Starch grains of Guduchi</b></p>
		
<p><b>Fig 7-Lignified scleroids of Yastimadhu</b></p>	<p><b>Fig 8-Pitted vessels of Yastimadhu</b></p>	<p><b>Fig 9-Prismatic crystal of Yastimadhu</b></p>
		
<p><b>Fig 10-Scleroids of Yastimadhu</b></p>	<p><b>Fig 11-Crystal fibres of Yastimadhu</b></p>	<p><b>Fig 12-Stone cells of Yastimadhu</b></p>



**Fig 1 -254nm Peak Display  
Plat 2: HPTLC at 254nm & 366nm of Rasayana Yuga**



**Fig 2- 366nm Peak Display**

**DISCUSSION**

Pharmacognostical study reveals the authentication of *Rasayana Yuga*. The cork cell, pitted vessels, crystal fibres, Prismatic crystal, starch grain, stone cell, parenchyma cell, scalariform vessels etc. are observed

under microscopes which were used as ingredients. All the physico-chemical parameters i.e. loss on drying, water soluble extract, alcohol soluble extract, Ph value were analyzed and found to be within normal reference range. The physicochemical analysis showed loss on

drying (8.035% w/w), water soluble extract (18% w/w), methanol soluble extract (11.12% w/w), pH(4.5). HPTLC profile of methanolic extract of the drug showed 8 spots at 254nm and 8 spots at 366nm, which shows the presence of active principles present in the sample.

### CONCLUSION

Pharmacognostical study findings confirm that all characters were found in ingredient drugs of *Rasayana Yoga*. The physicochemical analysis are 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 *Rasayana Yoga*.

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