

**PHARMACOGNOSTICAL AND PHARMACEUTICAL EVALUATION  
OF MADHUPIPPALYADIYOGAPRATISARANA IN  
SARVASARAMUKHAROGA WSR TO ORAL SUBMUCOUS FIBROSIS**

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## ABSTRACT

Oral Submucous Fibrosis is a chronic diseases of the oral cavity which resulting from the habit of chewing Areca nut, Pan masala, Gutakha, Tobacco and related products. *Madhu Pippalyadi Yoga* is a compound *Ayurvedic* formulation which not mentioned in classical text. *Madhu Pippalyadi Yoga* having a six contents like *Madhu*, *Pippali*, *Gairika*, *Jati*, *Haridra*, *Yastimadhu*. This drug used as a local treatment in *Pratisarana* form. Pharmacognostical and analytical study has been carried out for the evaluation of its efficacy in the management of

*Sarvasara Mukharoga*. Pharmacognocystudy showed that cork cell of *Yastimadhu*, stone cell of *Pippali*, Oil globule of *Jati*, Scalariform of *Haridra* etc. were identified. Analytical study showed 11 spots at 254nm and 9 spots at 366nm.

**KEYWORDS:** OSMF, *Madhu Pippalyadi Yoga*, *Sarvasara Mukharoga*.

## INTRODUCTION

Oral submucous fibrosis (OSMF) is a high risk precancerous condition characterized by changes in the connective tissue of the lamina propria and deeper part resulting in restricted mouth opening. OSMF now globally accepted as an Indian disease has one of the highest rates of malignant transformation amongst potentially malignant oral lesions and conditions.<sup>[1]</sup> Worldwide estimate of OSMF indicates that 2.5million people are affected with most cases connected on the Indian subcontinents especially Southeast India.<sup>[2]</sup> No one co-

relation of the disease OSMF can be made with any *Mukharoga* described in classics. So it can be taken as *Anukta Vyadhi* & can be managed considering the line of management for *Anukta Vyadhi*. In ability to mouth opening (*Krucchen Vivrunoti – Vataja Mukharoga*).<sup>[3]</sup> Burning sensation in mouth (*Daha- Pittaja Sarvasara*)<sup>[4]</sup> pain in mouth (*Toda-Vatika Sarvasara*)<sup>[5]</sup>, blanching of the oral mucosa (*Antahkapolamashritya Shyavpandu-Kapharbuda*)<sup>[6]</sup> etc are found in *Mukharoga*. Analyzing the diseases condition according to *Ayurveda* this condition is mostly similar to the *Vata Pitta Pradhana Tridosaja Mukharoga*. Local therapy is to prevent and reverse the fibrosis along with it to relieve burning sensation and irritation of the bucal mucosa. *Pratisarana* with *Lekhana*, *Chhedana* and *Ropana Aushadhi* will be more beneficial so *Madhupippalyadi Yoga* is selected. In classical text this drug compound is not described it's a *Anubhuta Yoga*. 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 *Madhu Pippalyadi 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.[1]

## 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>[7]</sup>

**Powder microscopy**

Powder of the drug was studied microscopically and microscopy characters of the powder were drawn.<sup>[8]</sup>

**Physic-chemical analysis**

*Madhu Pippalyadi Yoga* was analyzed by various physico-chemical parameters like: loss on drying, water soluble extract, alcohol soluble extract etc.<sup>[9]</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>[10]</sup>

**OBSERVATIONS AND RESULTS****Organoleptic characters of *MadhuPippalyad Yoga***

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

**Microscopic characters of *Madhu Pippalyadi Yoga***

Diagnostic characters of *Madhu Pippalyadi Yoga* was observed under microscope and presence of all ingredient shows their different characters. Cork cell of *Yastimadhu*, crystal fibres of *Yastimadhu*, prismatic crystal of *Yastimadhu*, pitted vessel of *Yastimadhu*, stone cell of *Yastimadhu*, starch grains of *Yastimadhu*, Stone cell of *Pippali*, oleoresin of *Pippali*, epicarp cell of *Pippali*, oil globule of *Jati*, orange colourcontant of *Gairika*, parenchyma cell of *Haridra*, scalariform vessel of *Haridra*. [plate 1 fig1-13].

**Physicochemical parameters of *MadhuPippalyadi Yoga***

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

**HPTLC study**

Chromatogram shows 11 prominent spots at 254nm with maximum  $R_f$  value 0.01, 0.10, 0.18, 0.28, 0.34, 0.39, 0.44, 0.59, 0.69, 0.79, 0.94 And 9 spots at 366nm with maximum  $R_f$  value 0.01, 0.08, 0.18, 0.27, 0.34, 0.40, 0.63, 0.70, 0.81. [plate 2 fig 1-2].

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

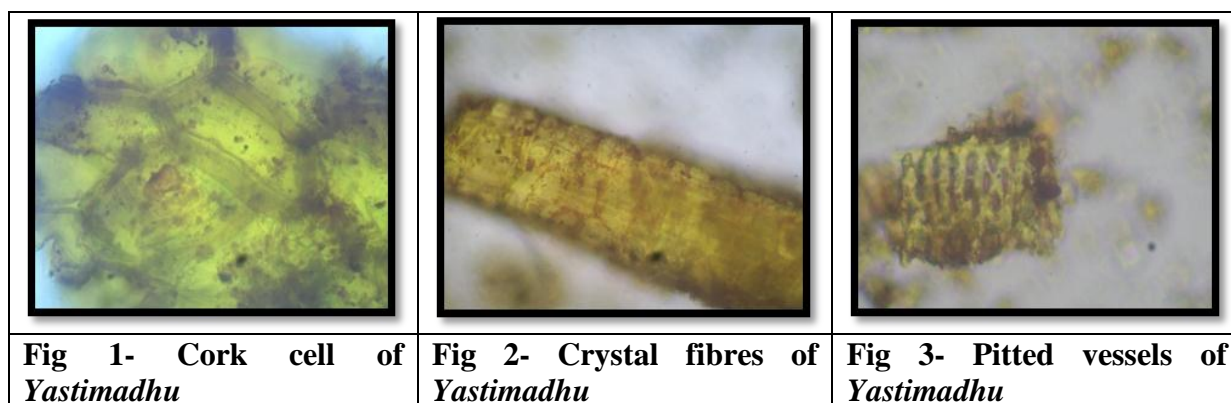
Sr. No.	Name Of The Drug	Botanical/Latine Name	Part used	Part
1	<i>Pippali</i>	<i>PipperLongum</i> Linn.	Dried Fruit	½
2	<i>Yastimadhu</i>	<i>GlycyrrizaGlabra</i> Linn.	Dried Root	1
3	<i>Gairika</i>	Ochre( $\text{Fe}_2\text{O}_3$ )	-	1
4	<i>Jati</i>	<i>Jasminum Officinale</i> Linn.	Fresh Leaf	1
5	<i>Haridra</i>	<i>Curcuma Longa</i> Linn.	Dried Rhizome	½
6	<i>Madhu</i>	<i>ApisMellifica</i>	-	As Required.

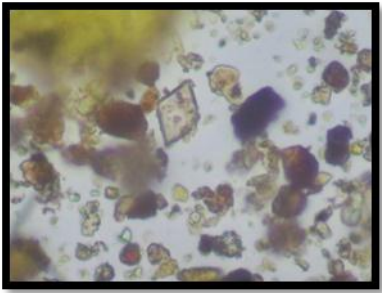
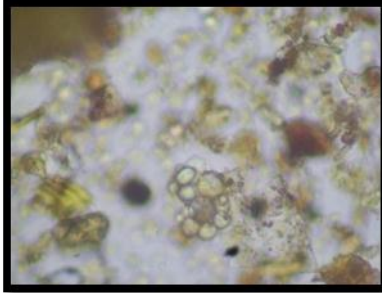
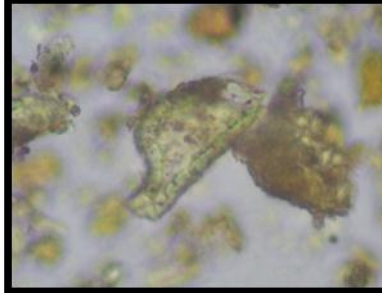
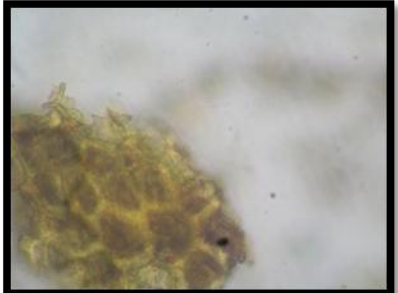
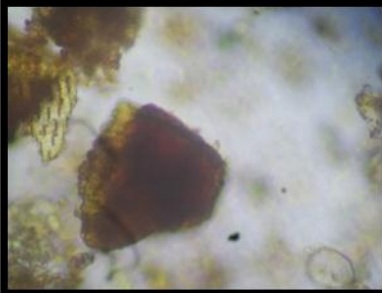
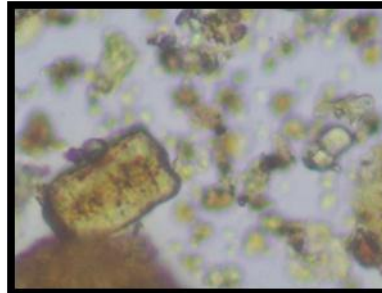
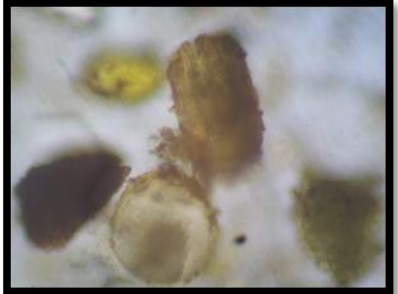
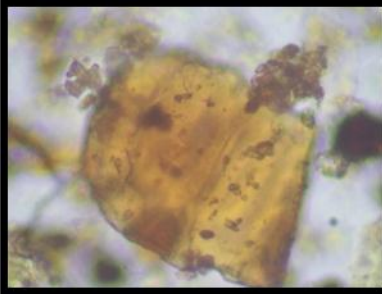
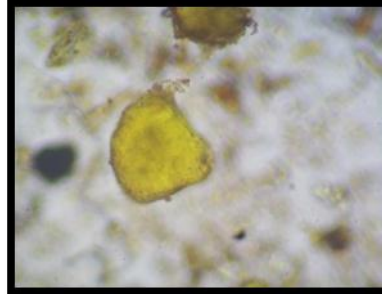
**Table 2: Organoleptic characters of *MadhuPippalyadi Yoga*[*Anubhuta*]**

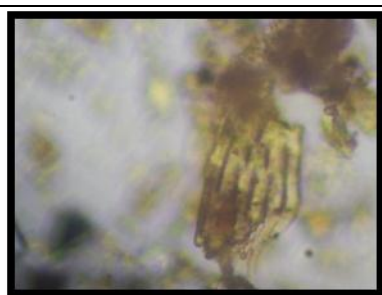
S.No.	Character	Results
1	Color	Brick Red
2	Odor	Gairika Smell
3	Taste	<i>Madhura-Katu-Kashaya</i>
4	Touch	Fine

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

S.NO.	Analytical Parameters	<i>Madhu-Pippalyadi Yoga</i>
1.	Loss On Drying	7.381% W/W
2.	Ash Value	28.78% W/W
3.	Water Soluble Extract	12.5% W/W
4.	Methanol Soluble Extract	10.35% W/W
5.	Ph (By Ph Paper)	6.0
6.	Partical Size	
	Above 60 Mesh	1.60%
	Between 60-85 Mesh	3.39%
	Between 85-120 Mesh	9.22%
	Below 120 Mesh	83.93%

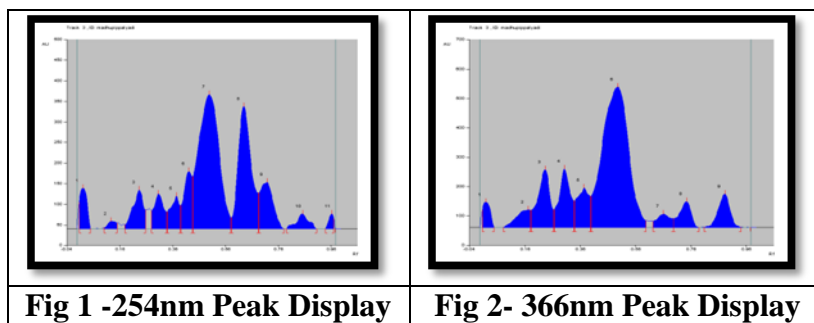
**Plate 1. Powder microscopy of *Mdhupippalyadi Yoga*****Fig 1- Cork cell of *Yastimadhu*****Fig 2- Crystal fibres of *Yastimadhu*****Fig 3- Pitted vessels of *Yastimadhu***

		
<b>Fig 4- Prismatic crystal of <i>Yastimadhu</i></b>	<b>Fig 5 - Starch grain of <i>Yastimadhu</i></b>	<b>Fig 6- Stone cell of <i>Yastimadhu</i></b>
		
<b>Fig 7- Epicarp cells of <i>Pippali</i></b>	<b>Fig 8- Oleoresin of <i>Pippali</i></b>	<b>Fig 9- Stone cell of <i>Pippali</i></b>
		
<b>Fig 10- Oil globule of <i>Jati</i></b>	<b>Fig 11- Orange color content of <i>Gairika</i></b>	<b>Fig 12- Parenchyma cells of <i>Haridra</i></b>



**Fig 13- Scalariform vessel of *Haridra***





**Plat 2: HPTLC at 254nm & 366nm of *Madhu-Pippalyadi Yoga***

## DISCUSSION

Pharmacognostical study reveals the authentication of *Madhu-Pippalyadi Yoga*. The cork cell, pitted vessels, crystal fibres, Prismatic crystal, starch grain, stone cell, epicarp cell, oleoresin, oil globule, 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 (7.381%w/w), water soluble extract (12.5%w/w), methanol soluble extract(10.35%w/w), pH(6). HPTLC profile of methanolic extract of the drug showed 11 spots at 254nm and 9 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 *Madhu Pippalyadi 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 *Madhu Pippalyadi Yoga*.

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