



INGREDIENTS IDENTIFICATION AND PHARMACEUTICAL EVALUATION OF- MADHUPIPPALYADI YOGA -AN AYURVEDIC POLYHERBAL FORMULATION

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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. *Madhupippalyadi Yoga* is a compound Ayurvedic formulation which not mentioned in classical text. *Madhupippalyadi 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 OSMF. Pharmacognoc study showed that Crystal fibres of *Yastimadhu*, Starch grain of *Yastimadhu*, Pitted vessels of *Yastimadhu*, Stone cell of *Pippali*, Orange color content of *Gairik*, Oil globule of *Jati* were identified. Analytical study showed 5 spots at 254nm and 4 spots at 366nm.

KEYWORDS: OSMF, *Madhupippalyadi Yoga Pratisarana*, *Gutakha*.

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.^[1] No one corelation 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 *AnuktaVyadhi*. In ability to mouth opening (Krucchen Vivrunoti – Vataja Mukharoga).^[3] Burning sensation in mouth (*Daha- Pittaja Sarvasara*)^[4] pain in mouth (*TodaVatikaSarvasara*)^[5], blanching of the oral mucosa (*Antahkapolamashritya Shyavpandu-Kapharbuda*)^[6] 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

Collection, Identification and authentication of raw drugs

The raw drugs for the study were procured form the Pharmacy of Gujarat Ayurved 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 Pharmacognoc Laboratory, Institute for Post Graduate Teaching & Research in Ayurveda, Gujarat Ayurved University, Jamnagar.

Table 1: Ingredients of MadhuPippalyadi Yoga[Anubhuta].

Sr. No.	Name Of The Drug	Botanical/Latine Name	Part used	Part
1	Pippali	PipperLongumLinn.	Dried Fruit	½
2	Yastimadhu	GlycyrrizaGlabraLinn.	Dried Root	1
3	Gairika	Ochre(Fe ₂ O ₃)	-	1
4	Jati	Jasminum Officinale Linn.	Fresh Leaf	1
5	Haridra	Curcuma Longa Linn.	Dried Rhizome	½
6	Madhu	ApisMellifica	-	As Required.

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.^[7]

Powder microscopy

Powder of the drug was studied microscopically and microscopy characters of the powder were noted.^[8]

Physic-chemical analysis

Madhupippalyadi Yoga was analyzed by various physico-chemical parameters like: loss on drying, water soluble extract, alcohol soluble extract etc.^[9]

High performance thin layer chromatography

HPTLC was performed as per the guide line provided by API. Methanolic 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.^[10]

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

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

Table 2: Organoleptic characters of Madhupippalyadi Yoga[Anubhuta]

S.No.	Character	Results
1	Color	Reddish yellow
2	Odor	Muddy
3	Taste	Sweet
4	Touch	Fine

Microscopic characters of Madhupippalyadi Yoga

Diagnostic characters of *Madhu Pippalyadi Yoga* was observed under microscope and presence of all ingredient shows their different characters. Crystal fibres of *Yastimadhu*, Starch grain of *Yastimadhu*, Pitted vessels of *Yastimadhu*, Stone cell of *Pippali*, Orange color content of *Gairika*, Oil globule of *Jati* were identified. [plate 1 fig1-13].

Physicochemical parameters of Madhupippalyadi Yoga

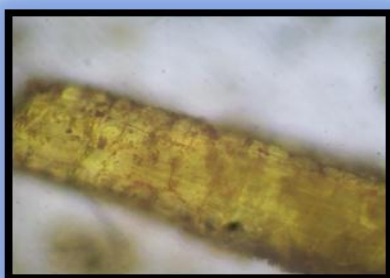
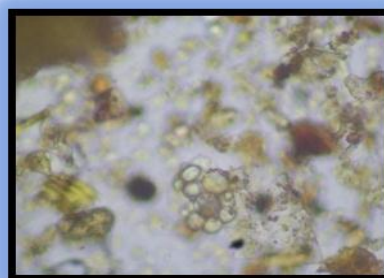
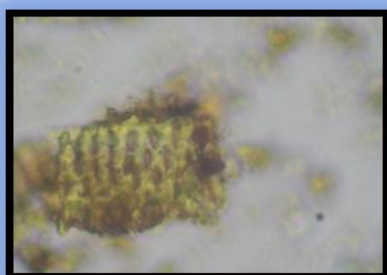
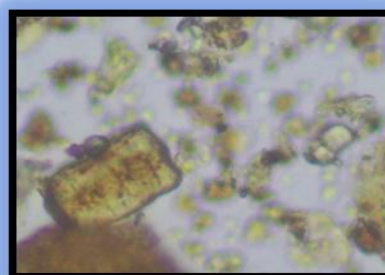
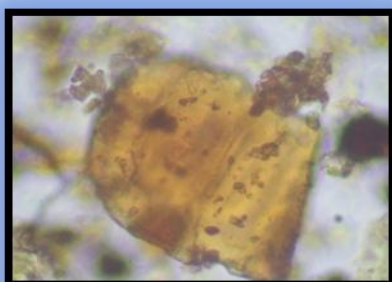
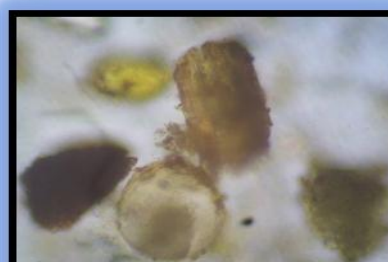
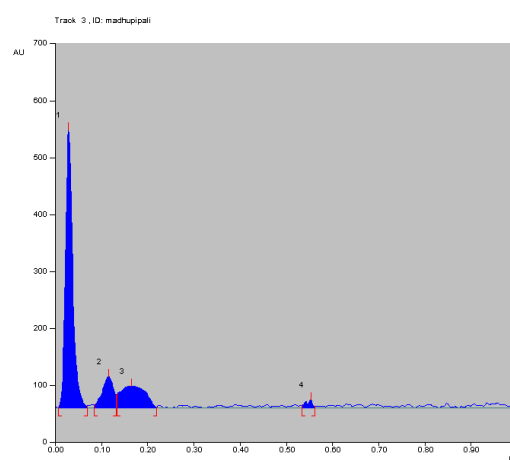
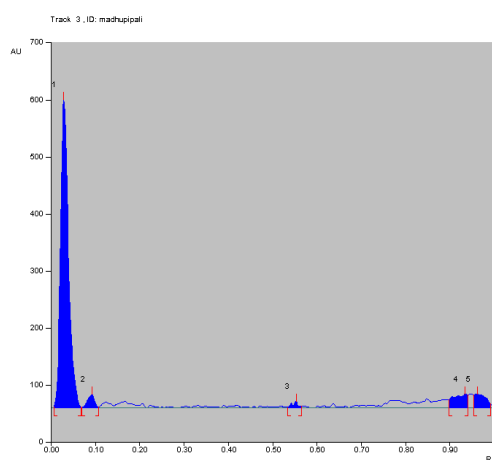
Physicochemical parameters of *Madhupippalyadi Yoga* as Ash value, Water soluble extracts, alcohol soluble extracts and pH etc. results are shown in Table 3.

Table 3: Physicochemical parameter of MadhuPippalyadi Yoga[Anubhuta].

S.NO.	Analytical Parameters	Madhu-Pippalyadi Yoga
1.	Loss On Drying	6.3%W/W
2.	Ash Value	11.6%W/W
3.	Water Soluble Extract	12.5%W/W
4.	Methanol Soluble Extract	10.35%W/W
5.	Ph (By Ph Paper)	6.5

HPTLC study

Chromatogram shows 5 prominent spots at 254nm with maximum R_f value 0.01, 0.12, 0.14, 0.22, 0.41 And 4 spots at 366nm with maximum R_f value 0.01 0.07, 0.40, 0.76. [plate 2 fig 1-2].

Plate 1. Powder microscopy of *Mdhupippalyadi Yoga*Crystal fibres of *Yastimadhu*Starch grain of *Yastimadhu*Pitted vessels of *Yastimadhu*Stone cell of *Pippali*Orange color content of *Gairika*Oil globule of *Jati*Plat 2: HPTLC at 254nm & 366nm of *Madhupippalyadi Yoga*.

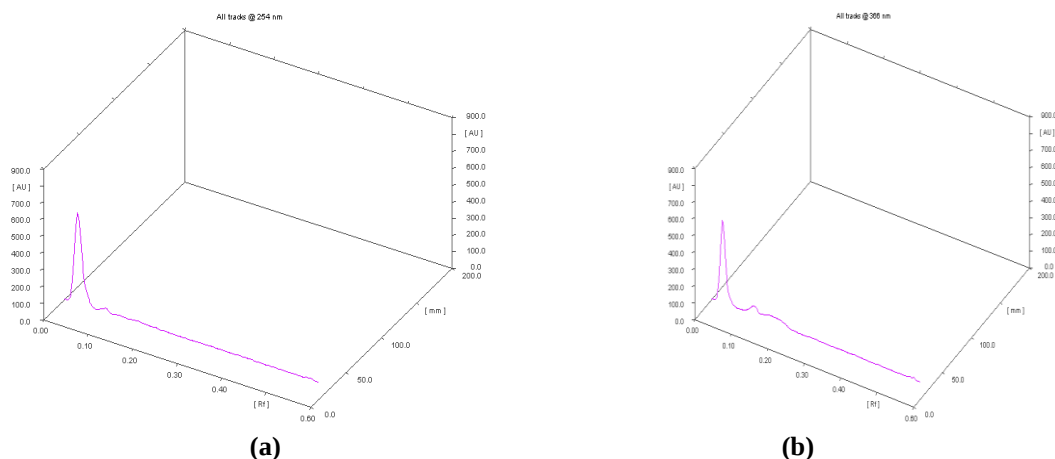


Plate 3: (Fig. a,b) Three dimensional (3D) Densitogram at (a) 254nm (b) 366nm.

DISCUSSION

Pharmacognostical study reveals the authentication of *Madhupippalyadi Yoga*. Crystal fibres of *Yastimadhu*, Starch grain of *Yastimadhu*, Pitted vessels of *Yastimadhu*, Stone cell of *Pippali*, Orange color content of *Gairik*, Oil globule of *Jati* 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 (6.3%w/w), water soluble extract (11.6%w/w), methanol soluble extract (10.35%w/w), pH(6.5). HPTLC profile of methanolic extract of the drug showed 5 spots at 254nm and 4 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 *Madhupippalyadi 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 *Madhupippalyadi Yoga*.

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