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PHARMACOGNOSTICAL AND ANALYTICAL EVALUATION OF *RASAYANA YOGA*

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ABSTRACT

Oral submucous fibrosis (OSMF) is a chronic debilitating disease of the oral cavity characterized by inflammation and progressive fibrosis of the lamina propria and submucosa, that results in marked rigidity and eventually inability to open the mouth. It manifests as blanching and stiffness of the oral mucosa, trismus, burning sensation in the mouth, intolerance to eating hot and spicy foods, repeated vesicular eruption and ulceration of the buccal mucosa, palate and pillars, loss of gustatory sensation, etc. In the management of OSMF *Rasayana Yoga* as internal medicine was, used *Rasayana Yoga* Contains is *Vata-Kapha Shamaka* properties. Most of the drugs are having immunomodulatory, antioxidant, anti-inflammatory, and cancer preventive properties that may have improved the status of *Dhatus* (tissues). By virtue of *Yogavahi* (has special affinity to carry and potentiate the action of main drug), *Sukshma* and *Sanskaranuvarti* (affinity to carry the properties of main drug along with own) properties, *Madhu* and *Ghrita* serve as a best vehicle for the drugs. The present work was carried out to standardize the finished product *Rasayana Yoga* in terms of its identity, quality and purity. Pharmacognostical and Physico-chemical observations revealed the specific characters of all active constituents used in the preparation. The Pharmaceutical analysis showed that the Water soluble extract is 15.8 w/w, Methanol soluble extract is 10.48% w/w Ash value is 8.50% w/w, Loss on drying at 110 C is 6.5% w/w and pH value is 55. HPTLC study of *Rasayana Yoga* revealed 8 spots at 254 nm and 6 spots on 366 nm.

KEYWORDS: *Rasayana Yoga*, pharmacognosy, pharmaceutical analysis *Sukshma, Sanskaranuvarti.*

INTRODUCTION

On analyzing the disease condition with Ayurvedic approach, OSMF seems to be nearer to *Vata-Pitta* dominant chronic *Sarvasara Mukharoga*. Some scattered symptoms like inability to open the mouth *(Kruchhen Vivrunoti – Vataja Sarvasara)*[1] burning sensation in mouth *(Daha- Pittaja Sarvasara)*[4], pain in mouth *(Toda-Vatika Sarvasara*[3], blanching of the oral mucosa *(Antahkapolamashritya Shyavpandu- Kapharbuda)*[2] are found in *Mukharoga.* On analyzing at the disease condition OSMF can be considered in the *Vata Pradhana Tridoshaja Mukharoga*. Most of the drugs of *Rasayana Yoga* are having *Rasayana* (rejuvenating), *Balya, Deepana* (carminative), *Pachana* (digestion), *Shothahara*, *Vranapaha* (wound healing) and *Tridosha* predominantly *Vata Pitta* pacifying properties. It is obvious that it needs to be treated at local as well as systemic level *Kaya Sirsovirekam*, *Vamana, Kavala Dharan*, and use of *Katu* & *Tikta dravya* and other procedure to remove *Kapha* and *Raktahara Kriya* should be done. In the management of OSMF *Rasayana Yoga* as internal medicine was used. Ingredient of *Rasayana Yoga* having properties like *Rasayana*, immune-modulator, anti-allergic, anti-viral, antibacterial, anti-inflammatory, helpful for digestive system, tonic for liver and blood purifier. All properties of these drugs helpful for breaking pathology of OSMF

MATERIALS AND METHODS

Collection, identification and authentification of raw drugs

Ingredients of *Rasayana Yoga* compound were procured from the Pharmacy of IPGT & RA, Jamnagar, India. Taking all ingredients given proportion and mixed well. This formulation was pack in airtight container. Their characteristics were confirmed in the Pharmacognosy of IPGT & RA, Jamnagar, India by correlating their morphological and microscopically features with relevant literature.

Ingredients of *Rasayana* Yoga

Rasayana Yoga is combination of fives drug i.e *Rasayan Churna (Amalaki, Guduchi, Gokhsura), Haridra, Yashtimadhu* and *Madhu.* Details are given in table no.1

Pharmacognostical study

The Pharmacognostical study comprises of organoleptic study and microscopic study study of finished product i.e. *Rasayana Yoga*.

Organoleptic Study

The Organoleptic characters of Ayurvedic drugs are very important and give the general idea regarding the genuinity of the sample. Organoleptic parameters like Taste, Colour, odour and touch were scientifically studied.[3]

Microscopic Study

Rasayana Yoga was powdered and dissolved with water and microscopy of the sample was done without stain and after staining with Phloroglucinol + HCl. Microphotographs of *Rasayana Yoga* was also taken under Corl-zeiss trinocular microscope.[4]

Physico-chemical analysis

Rasayana Yoga was analyzed using various standard physico-chemical parameters such as loss on drying, water soluble extract, alcohol soluble extract etc.[5]

High performance thin layer chromatography (HPTLC)

HPTLC was performed as per the guideline provided by API. Methanolic extract of drug sample was used for the spotting. HPTLC was performed using Toluene+ Ethylacetate+ Acetic acid (7:2:1) solvent system and observed under visible light. The colour and Rf values of resolved spots were noted.[6]

RESULTS AND DISCUSSION

Organoleptic characters of *Rasayana Yoga*

Organoleptic characters contents of *Rasayana Yoga* like colour, taste, touch, Odour were recorded and shown in Table 2.

Microscopic Study

In microscopic examination of *Rasayana Yoga* (Figure no.1) Border pitted vessels of *Guduchi*, Cilica depositions of *Amalaki*, Colonchyma cells of *Guduchi*, Lignified colonchyma cells of *Guduchi*, Mesocarp cells of *Amalki*, Scleroid of *Amalaki*, Group of starch grains of *Guduchi*, Group of stone cells of *Gokshura*, Lignified border pitted cells of *Guduchi*, Oleorasine content of *Haridra*, Parenchyma cells of *Haridra*, Sclalform vessels of *Hridra*, Annular and scleriform vessels of *Haridra*. (Plate1).

Analytical Study

In analytical study, three parameters are used i.e. specific gravity, refractive index and pH value. Result of analytical study (physico-chemical parameters) shown in table no.3.

HPTLC study

On performing HPTLC, visual observation under UV light showed few spots but on analyzing under densitometer much more was observed and at 254nm the chromatogram showed 3 peaks, at 366nm the chromatogram showed 2 peaks. Details shown in table no.4 and Plate 2.

Table 1: Ingredient of *Rasayan yoga.*

Sr. No.	Name of the drug	Botanical /Latin name	Part used	Part
1	*Guduchi*	*Tinospora cordifolia* (Willd)	Kanda	1
2	*Amalaki*	*Embelia officinalis* Gaertn	Phala	1
3	*Gokshura*	*Tribulas terrestris* Linn.	Moola	1
4	*Haridra*	*Curcuma longa* Linn.	Kanda	½
5	*Yashtimadhu*	*Glycyrriza glabra* Linn.	Moola	1

Table 2: Organoleptic parameters.

Sr. No.	Character	Observation
1	Colour	Dull Yellow
2	Odour	Slightly aromatic
3	Test	Sweet
4	Touch	Fine

Table 3: Values of physico-chemical parameters.

Sr. No.	Test	Result *Rasayana Yoga*
1	Loss on drying110	7.10 %w/w
2	Ash value	8.08 %w/w
3	Water soluble extract	16.9 %w/w
4	Methanol soluble extract	12.13 %w/w
5	Ph	5.6 %w/w

Table 4: Consolidated data of HPTLC of *Rasayana Yoga.*

Conditions	No. of spots	Max. Rf
Sort UV(254nm)	8	208.0, 12.6, 14.4, 46.7, 57.0, 106.1, 0.6, 66.4
Long UV(366nm)	6	186.9, 80.1, 223.8, 244.7, 342.7, 12.5

Plate 1: Microphotographs of *Rasayana Yoga.*

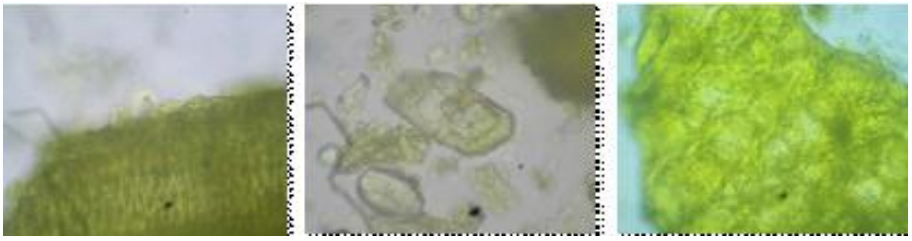


Fig 1: Border pitted vessels of *Guduchi.*

Fig 2: Collenchymas cells of *Guduchi.*

Fig 3: Cork cells of *Guduchi.*

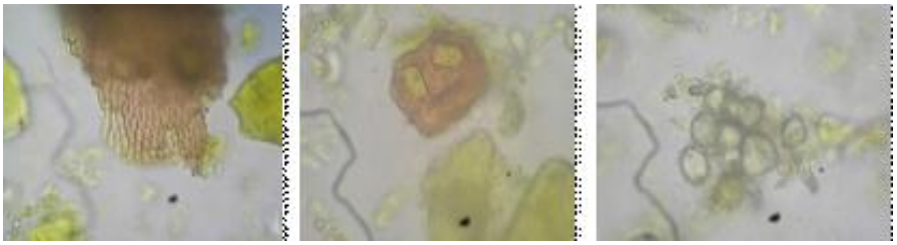


Fig 4: Lignified border of pitted vessel of *Guduchi.*

Fig 5: Lignified collenchymas cells of *Guduchi.*

Fig 6: Starch grains of *Guduchi.*

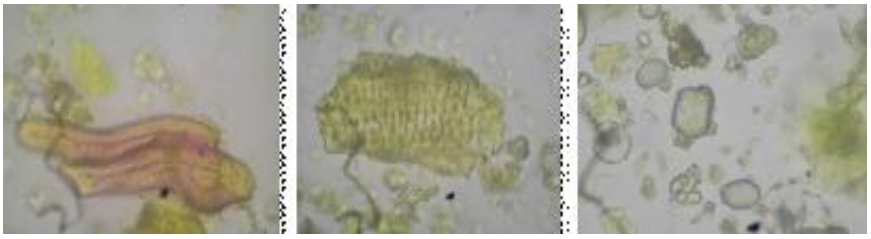


Fig 7: Lignified scleroids of Yastimadhu.

Fig 8: Pitted vessels of Yastimadu.

Fig 9: Prismatic crystal of Yastimadhu.

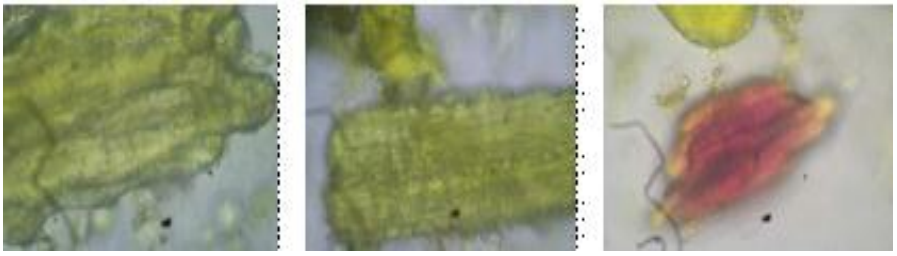


Fig 10: Scleroids of *Yastimadhu.*

Fig 11: Crystal fibres of *Yastimadhu.*

Fig 12: Stone cells of *Yastimadhu.*

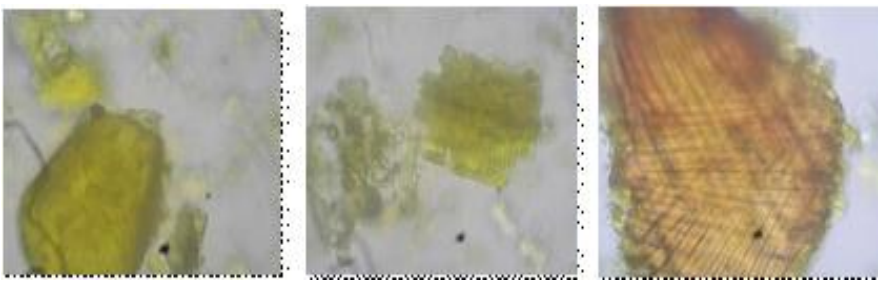


Fig 13: Parenchyama cells of *Haridra.*

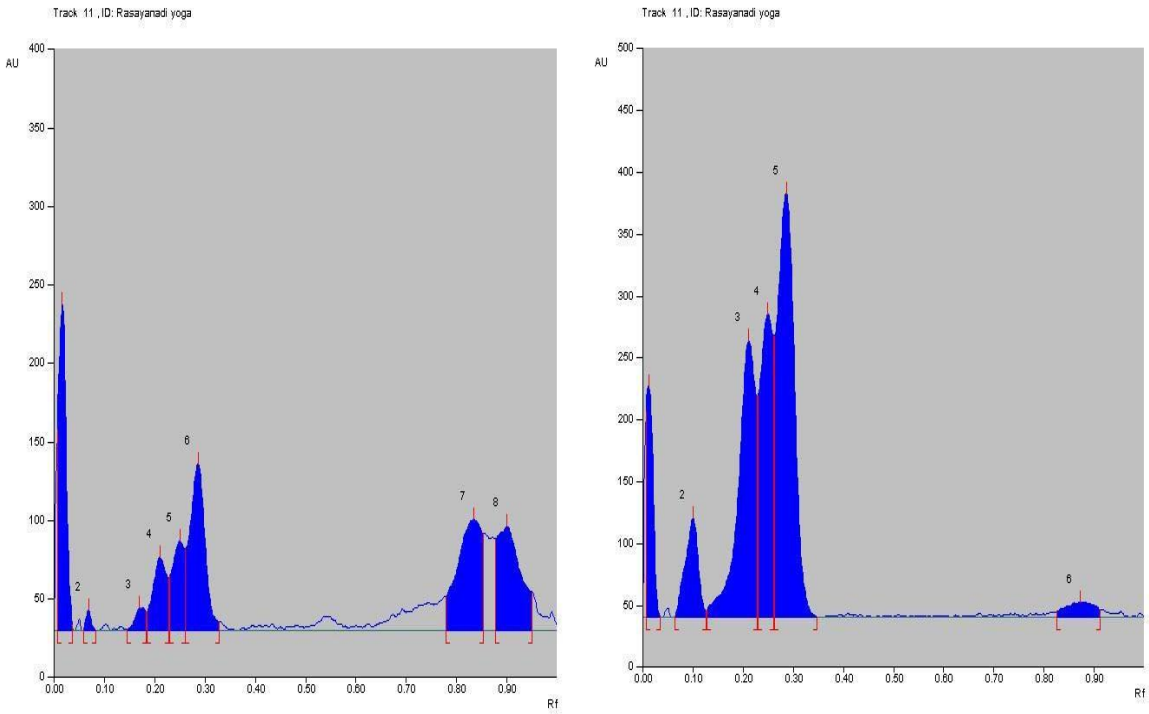
Fig 14: Scalriform vessel of *Haridra.*

Fig 15: Lignified stratified fibres of *Gokshura.*

Fig 16: Stratified fibres og *Gukshura.*

Fig 17: Trichome of *Gokshura.*

Fig 18: Mesocarp cells of *Amalaki.*



(a) **(b)**

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

CONCLUSION

The present study can be used as one of the parameters for standardization during the routine quality control of *Rasayana* Yoga. Standardization is a measurement for ensuring the quality control enabling the reproducibility of the formulation. The pharmacognostical and physico-chemical analysis of *Rasayana Yoga* confirmed the purity and genuinety of the drug. This study may be beneficial for future researchers and can be used as a reference standard in the further quality control researchers.

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