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Vedika Ade
MS Scholar, Department of Shalakya Tantra, Institute for Post Graduate Teaching & Research in Ayurveda, GAU, Jamnagar Gujarat, India

DB Vaghela
Associate Professor, Department of Shalakya Tantra, Institute for Post Graduate Teaching & Research in Ayurveda, GAU, Jamnagar Gujarat, India

Harisha CR
Head Pharmacognocy laboratory, Institute for Post Graduate Teaching & Research in Ayurveda, GAU, Jamnagar Gujarat, India

Shukla VJ
Pharmaceutical Chemistry Laboratory, Institute for Post Graduate Teaching & Research in Ayurveda, GAU, Jamnagar Gujarat, India

Correspondence
Vedika Ade
MS Scholar, Department of Shalakya Tantra, Institute for Post Graduate Teaching & Research in Ayurveda, GAU, Jamnagar Gujarat, India

Pharmacognoctical and analytical study of Rasayanadi yoga

Vedika Ade, DB Vaghela, Harisha CR and Shukla VJ

Abstract
The eye is the most highly specialized sense organ serving the most vital function of providing sight to living creatures. Ocular allergic in its many forms is one of the major causes of chronic conjunctivitis. *Netrabhishyanda* is correlated with conjunctive and its type. In the management of *Netrabhishyanda* Rasayanadi Yoga as internal medicine was, used Rasayanadi Yoga Contains is *Vata-Kapha Shamaka* properties so it is reduce inflammation and redness of eye. Drugs are endowed with *Sheeta Virya* and *Madhura Rasa* qualities will be more effective in allergic conjunctivitis resulting in a healthy eye without any untoward effects. The present work was carried out to standardize the finished product Rasayanadi 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 5.48% w/w, Methanol soluble extract is 9.48% w/w Ash value is 13.78% w/w, Loss on drying at 110 C is 6.4% w/w and pH value is 5. HPTLC study of Rasayanadi Yoga revealed eight spots at 254 nm and six spots on 366 nm.

Keywords: rasayanadi yoga, pharmacognosy, pharmaceutical analysis

Introduction
Ayurveda, so called an eternal science, the science of life deal s with spiritual, psychological an d physical wellbeing of the individual *Abhishyanda* is one among the *Sarvagata Netraroga* causing great threat to the vision with mild to gross visual loss. According to Acharya Sushruta, *Abhishyanda* is the main cause for all the eye diseases and it is *Aupasargikaroga*. In Sushruta Samhita four separate chapters have been devoted to the treatment of *Abhishyanda* after explaining *Sarvagata Roga.* It should be treated as soon as possible otherwise complications due to *Abhishyanda* will be severe in nature and difficult to save eyesight [1]. Allergic conjunctivitis is a recurrent ocular pathology due to decreased immunity of the body. Allergic Conjunctivitis (Prevalence 5-22% of the general population; Recurrence in 41-62% cases) has an equal distribution more or less throughout the world, without any exception to the developed and under developed countries [2]. In the management of *Netrabhishyanda* Rasayanadi Yoga as internal medicine was used. Ingredient of Rasayanadi 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 drug helpful for breaking pathology of *Netrabhishyanda* (Allergic Conjunctivitis)

Materials & Methods
Collection, identification and authentification of raw drugs
Ingredients of Rasayanadi 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 *Rasarayanadi Yoga*
Rasarayanadi Yoga is combination of four drug i.e *Raasayan Churna (Amalaki, Guduchi, Gokhsura), Haridra, Khadira and Arogyavardhini Rasa 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. Rasayanadi 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
Rasayanadi Yoga was powdered and dissolved with water and microscopy of the sample was done without stain and after staining with Phloroglucinol + HCl. Microphotographs of Rasayanadi Yoga was also taken under Corl-zeiss trinocular microscope [4].

Physico-chemical analysis
Rasayanadi 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 rasayanadi yoga
Organoleptic characters contents of Rasayanadi Yoga like colour, taste, touch, Odour were recorded and shown in Table 2.

Microscopic Study
In microscopic examination of Rasayanadi 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*, Oil globule of *Khadira*, Tannin content of *Khadira*, Crystal fibres of *Khadira*, Fibres of *Khadira*, Fibres passing through medulary rays of *Khadira* are seen. (Figure 1)

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 figure 2.

Table 1: Ingredient of Rasayanadi Yoga

Sr. No.	Drug			
1.	*Rasayana churna* combination of – 1. *Amalaki* 2. *Guduchi* 3. *Gokshura*	**Latin name**	**Quantity**	**Part used**
		1. *Emblica officinalis* Gaertn.	1 part	Fruit
		2. *Tinospora cordifolia* Willd.		Steam
		3. *Tribulus terresteris* Linn.		Root
2.	*Khadira*	*Acacia catechu* Linn.	1 part	*Twak*
3.	*Haridra*	Curcuma longa Linn.	½ part	Rhizome
4.	*Arogyavardhini Rasa*	-	¼ part	-

Table 2: Organoleptic Parameters

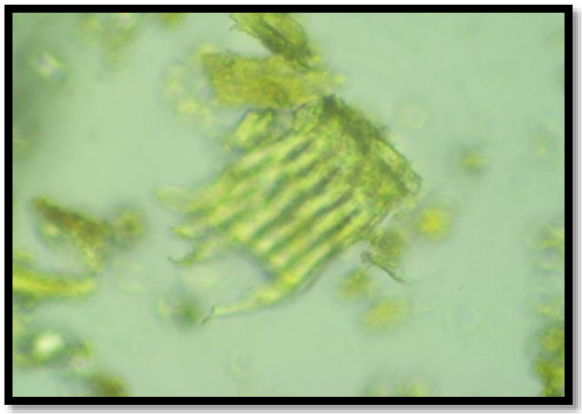
Sr. No	Character	Observation
1	Colour	yellow
2	Odour	slightly aromatic
3	Test	bitter
4	Touch	fine coarse

Table 3: Values of physico-chemical parameters

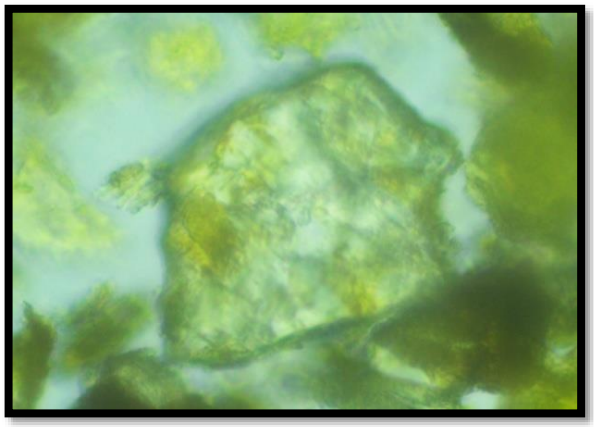
Sr. No	Test	Result Rasayanadi Yoga
1.	Water soluble extract	5.48% w/w
2.	Methanol soluble extract	9.48% w/w
3.	pH	5
4.	Ash value	13.78% w/w
5.	Loss on drying at 110 C	6.4% w/w

Table 4: Consolidated data of HPTLC of Rasayanadi Yoga

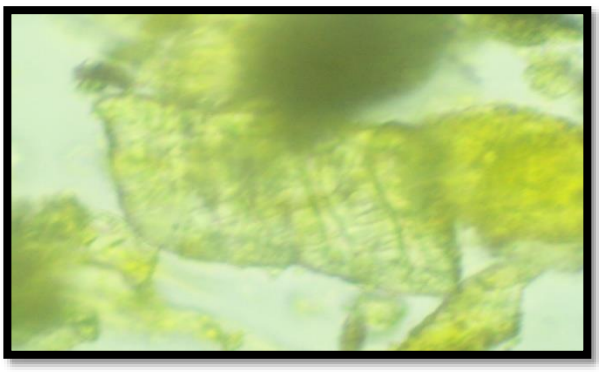
Conditions	No. of spots	Max. Rf
Short UV (254 nm)	8	208.0, 12.6, 14.4, 46.7, 57.0, 106.1, 0.6, 66.4
Long UV (366 nm)	6	186.9, 80.1, 223.8, 244.7, 342.7, 12.5



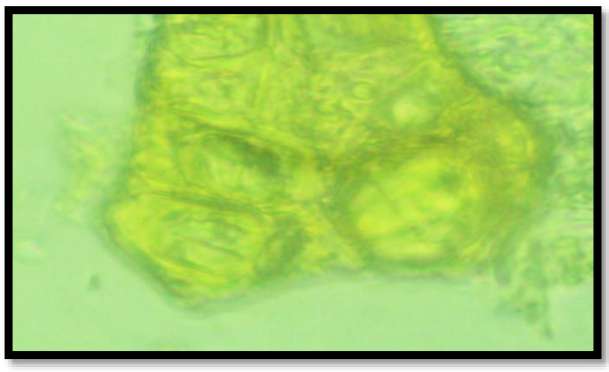
Border pitted vessels of *Guduchi*



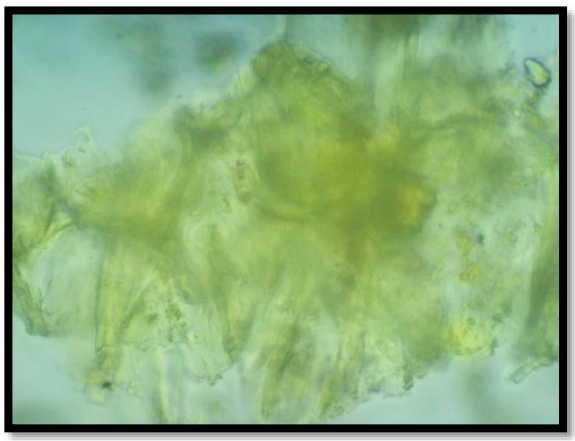
Cilica depositions of *Amalaki*



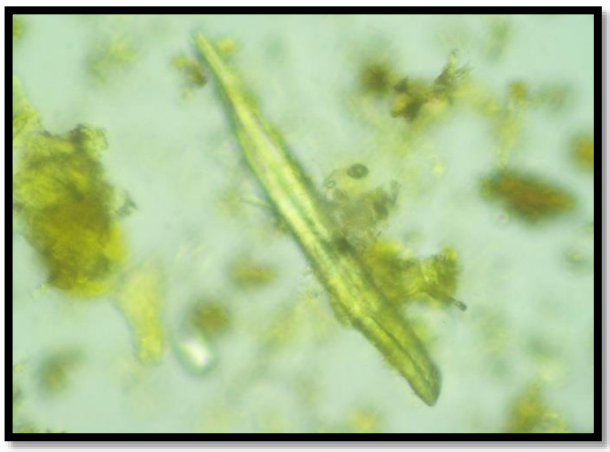
Colonchyma cells of *Guduchi*



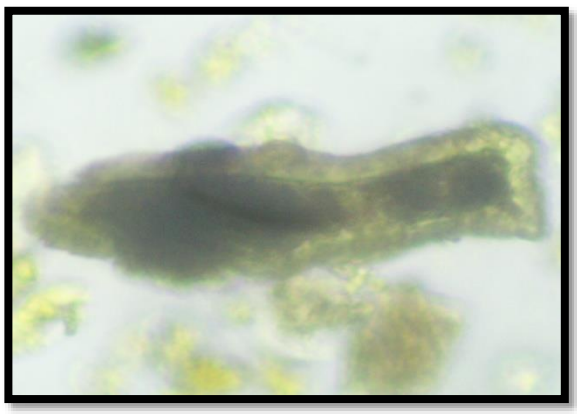
Lignified colonchyma cells of *Guduchi*



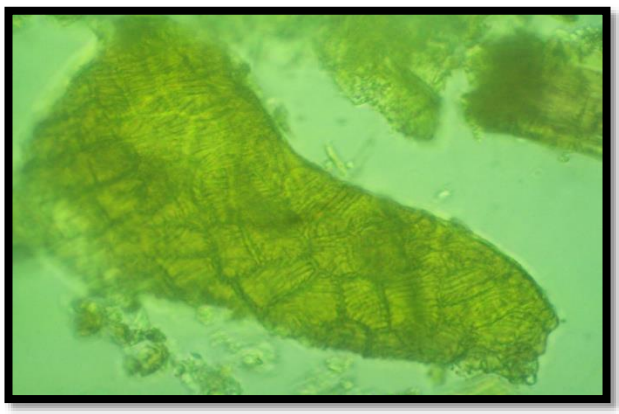
Mesocarp cells of *Amalaki*



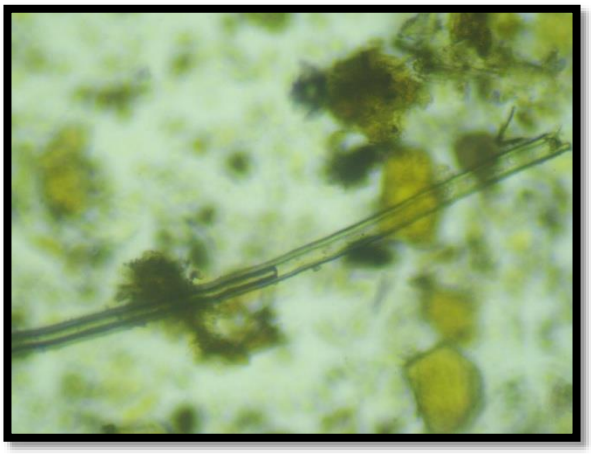
Scleroid Of *Amalaki*



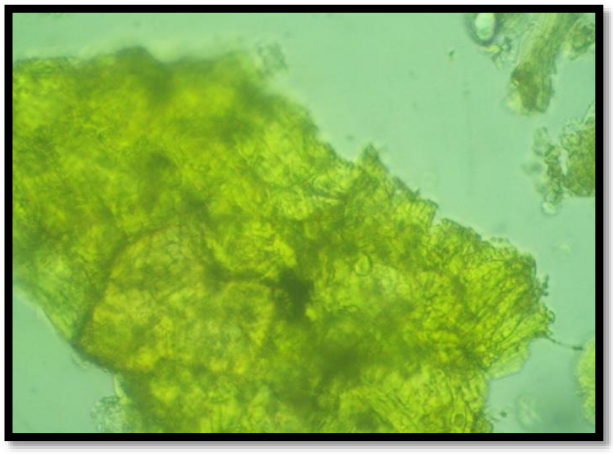
Stone cell of *Gokshura*



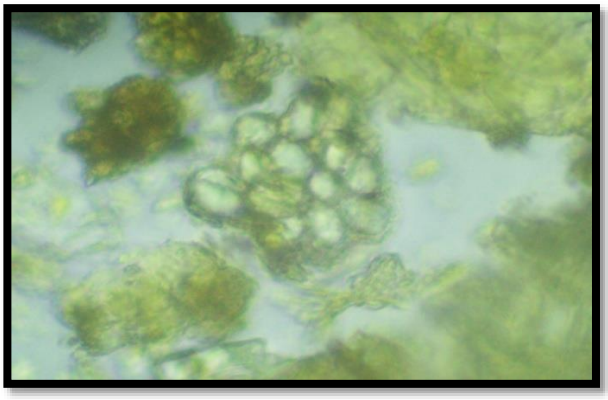
Stratified epidermal cells of *Gokshura*



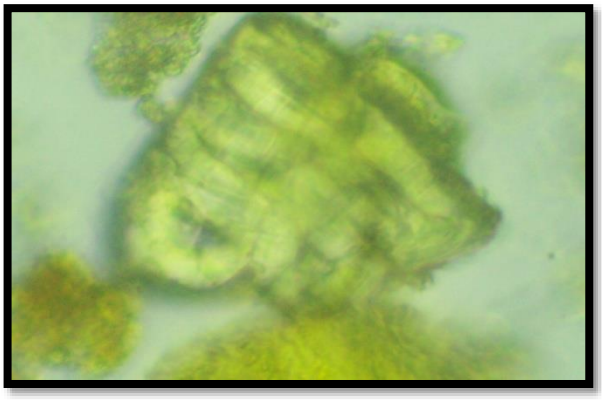
Trychome of *Gokshura*



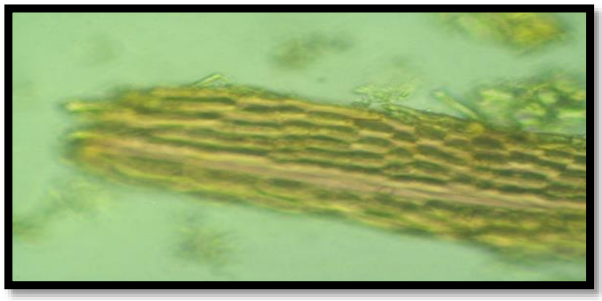
Cork cells of *Guduchi*



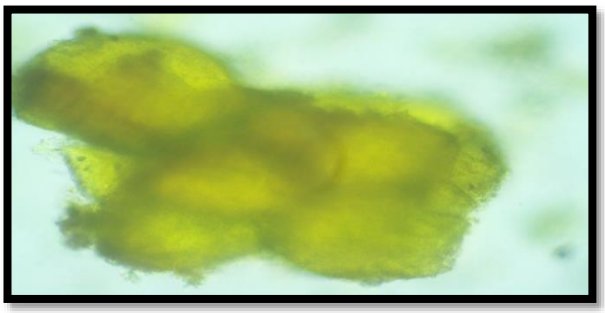
Group Of starch grains of *Guduchi*



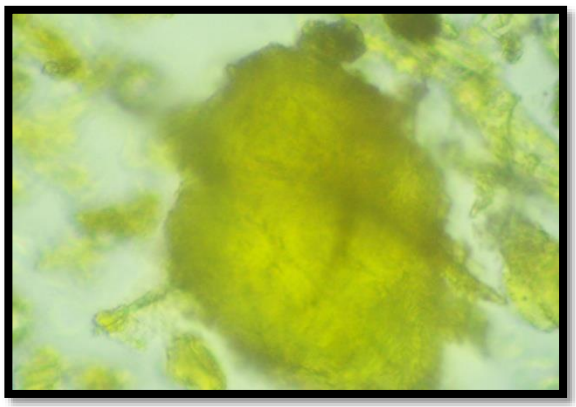
Group of stone cells of *Gokshura*



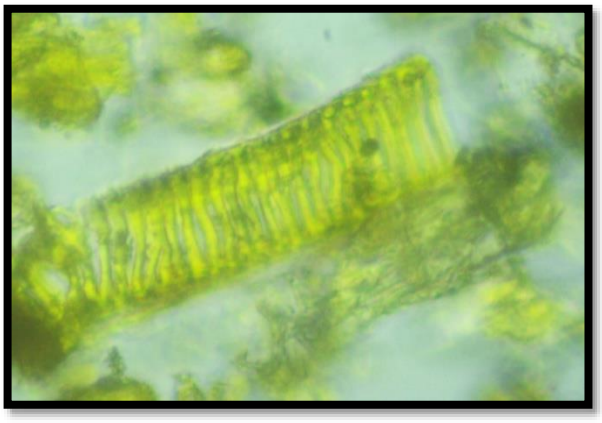
Lignified border pitted cells of *Guduchi*



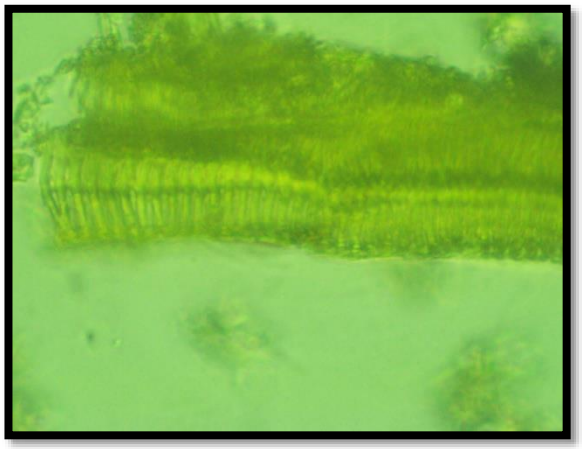
Oleorasine content of *Haridra*



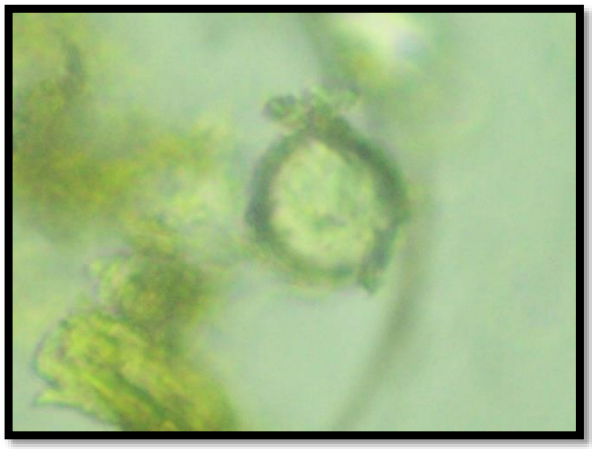
Parenchyma cells of *Haridra*



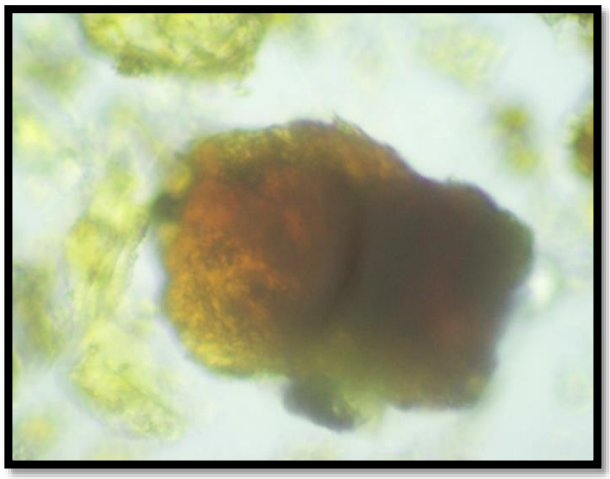
Sclalform vessels of *Hridra*



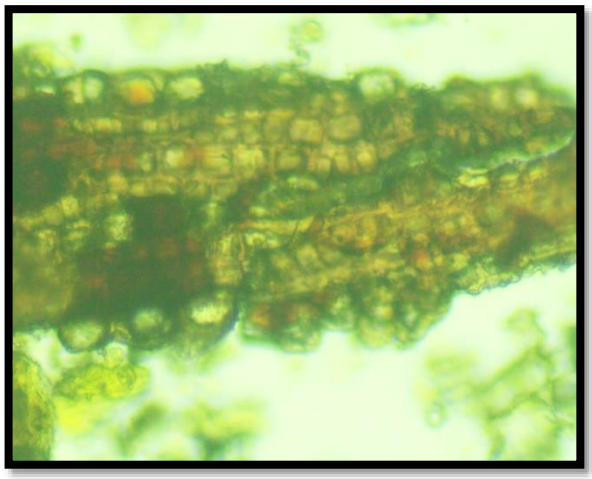
Annular and scleriform vessels of *Haridra*



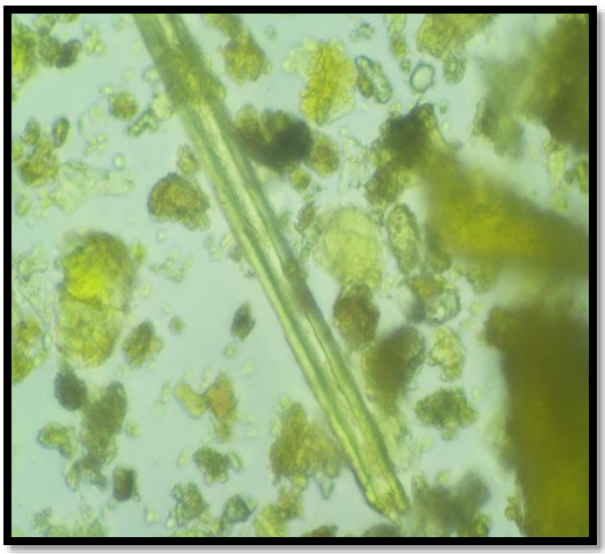
Oil globule of *Khadira*



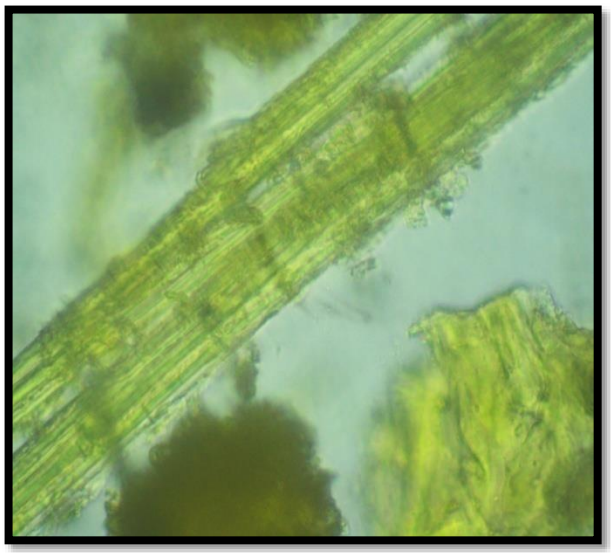
Tannin content of *Khadira*



Crystal fibres of *Khadira*

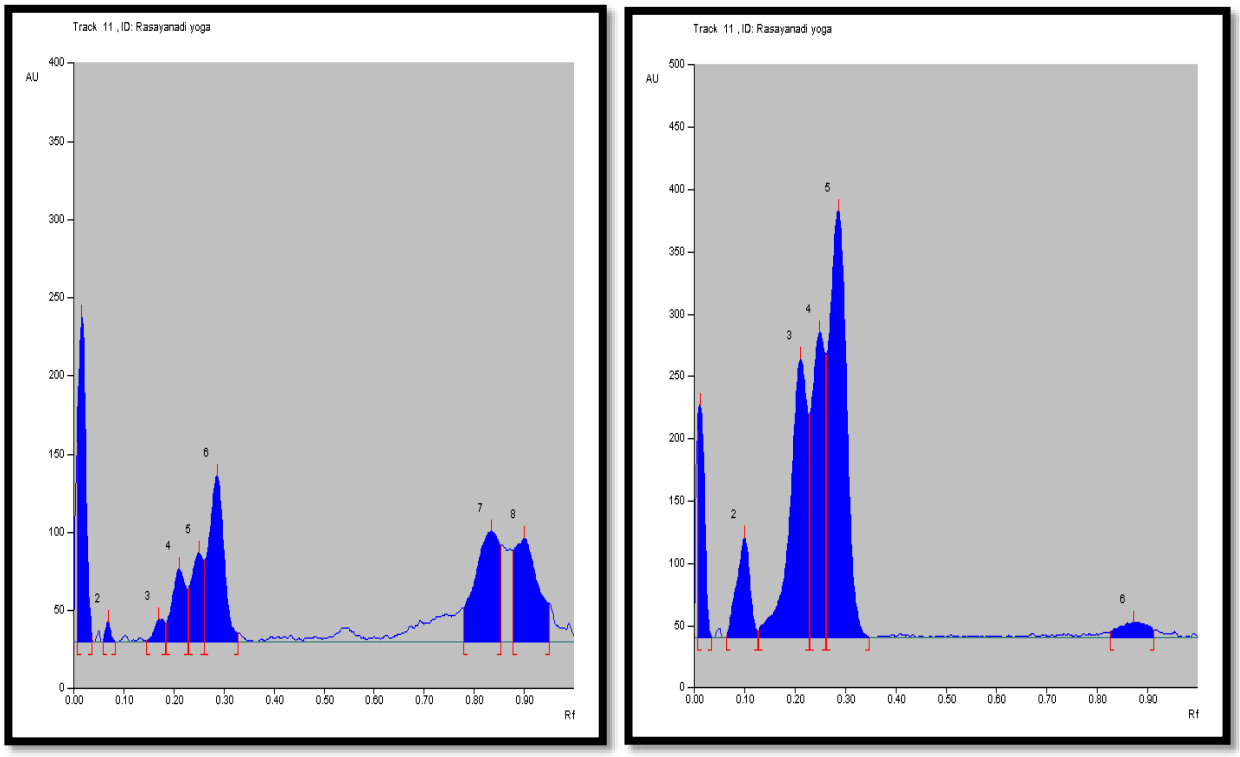


Fibres of *Khadira*



Fibres passing through medulary rays of *Khadira*

Fig 1: Main constituents seen in microscopic study of *Rasayana Yoga*



Short UV (254 nm) Long UV (366 nm)

Fig 2: Photograph of HPTLC of Rasayanadi Yoga

Conclusion

Eye is important and delicate part of body, So Quality control of formulation given in *Netrabhishyanda* is very much necessary to assess its safety, purity and universal acceptability Ayurvedic formulations are lacking in defined quality control parameters. Therefore, the present study can be used as one of the parameters for standardization during the routine quality control of Rasayanadi Yoga. Standardization is a measurement for ensuring the quality control enabling the reproducibility of the formulation. The pharmacognostical and physico-chemical analysis of Rasayanadi 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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