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PHARMACOGNOSTICAL & PHYTO-CHEMICAL EVALUATION OF *TRIPHALADI KASHAYA*-W.S.R. TO *BEEJAKOSHA GRANTHI* (OVARIAN CYST)

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ABSTRACT

Woman surpassing through different stages and phases prospers the house hold and society. In Modern era as a professional and responsible citizen she has to fulfil the dual responsibility for which she needs perfect physical, psychological and emotional health. Ovarian cyst is an emerging problem among the women of reproductive age group. Special reference of *Granthi* of female reproductive system is not available in any classics but it can be called as *Beejakosha Granthi* on the basis of its origin from *Beejakosha* and its surroundings. *Triphaladi Kashaya* has been selected in present study. *Triphaladi Kashaya* was used as *Kwatha Kalpana* mentioned by S*harangdhara Samhita*. Till date there is no scientific evaluation has been observed on this formulation. All attempts have been made to evaluate its phamacognostical and physico - chemical profile.*Yavakuta* of *Triphaladi Kashaya* was analyzed through Pharmacognostically and also it was analyzed through qualitative and quantitative analysis of physicochemical parameters. High Performance Thin layer Chromatography study (HPTLC) was also studied. Pharmacognostical results shows Pitted stone cell, Resetten crystal, Scleroids of *Amalaki*, Cluster crystal, Fibres, Corck cells, Lignified fibre, Prismatic crystal, Rhomboided crystal, Stone cells, Spiral vessels, Simple fibre, Simple trichome, Stellate trichome. Qualitative study shows that pH is 6.5, Ash value is 9.52% w/w, Loss on drying is 15.4%, Water soluble extract is 18.57 % & Alcohol soluble extract is 27.5%, HPTLC study shows that maximum 9 spots were obtained when viewed under short wave ultra violet light both (254 nm) and (366 nm).

Keywords: *Beejakosha Granthi*, *Triphaladi Kashaya*, Phytochemical Analysis, Chromatography

INTRODUCTION: Woman surpassing through different stages and phases prospers the house hold and society. As a wife and mother she becomes the locus of the family which is a functional unit of society. In modern era as a professional and responsible citizen she has to fulfil the dual responsibility for which she needs Physical, Psychological and Emotional health.Ovarian cyst is an emerging problem among the women of reproductive age group. [1] Ovarian cyst is fulfilled sacs inside ovary. It is most common neoplasm.[2] Nearly 2% of the adnexal masses are ovarian carcinomas or border line tumours.[3] Ovarian cancer is 2nd most common of genital cancers and accounts for 10-15% of all gynaecological cancers in developing countries including India.[4] Ovarian cancer has the worst prognosis among all gynecological malignancies. According to Ayurveda,

Granthi is included among disorders of vitiation of *Mamsa*, *Asruk* & *Meda*[5]. From its etiopathogenesis classification and its management, *Acharya* Sushruta has given elaborate description of *Granthi* but not mentioned about neoplastic swelling of female Reproductive organ, though a reference related to *Granthi* of male genital tract is available. In this study, *Triphaladi Kashaya* includes *Triphala*, *Varuna*, *Shigru* & *Dashamoola*. The different parts are used of these *Yavakuta*. The reference is taken from *Chakradatta Vidradhi Chikitsa Adhyaya*. [6] This Formulation having the properties like *Kaphamedohara, Lekhana, Granthihara, Vidradhihara, Mootrakruchhrahara, Shothahara.* There has been increasing acceptance of natural products and therapies in the world during the past few decades and also increase in use of Ayurvedic remedies globally. So, quality control for efficacy and safety of herbal products is of main purpose.[7,8] The development of this traditional system of medicine with the perspective of Safety, efficacy and quality will help not only to preserve the traditional heritage but also to rationalize the use of the natural products in healthcare. Therefore Initial steps in quality standardization of compound formulation are to establish the presence of each ingredient in the finished final product, followed by the pharmaceutical analysis. Chromatographic techniques were adopted for the separation of active moieties present in the formulation. Therefore, an attempt has been made to standardize *Triphaladi Kashaya* Pharmacognostical, Physico-chemical and HPTLC fingerprint profile.

AIM & OBJECTIVES

To Know the impact of cellular and ergastic content present in the finished product by evaluate Physico-chemical, Phytochemical & Microscopical profiles.

MATERIALS AND METHODS

All the raw drug materials required for *Triphaladi Kashaya* were collected from sthe pharmacy of Gujarat Ayurved University, Jamnagar.

Table no. 1 Ingredients of *Triphaladi Kashaya*

No	Drug	Botanical name	Part used	Ratio
1	*Triphala*	*Haritaki-Terminalia chebula* Retz		
		Bibhitaki-Terminalia Bellerica Roxb	Fruit	12 gm
		Amalaki-Emblica Officinalis Gaert		
2	*Shigru*	*Moringa Oleiofera* Lam.	Stem bark	12 gm
3	*Varuna*	*Crateva nurvala* Buch.ham	Bark	12 gm
4	*Dashamoola*	*Bilva-Aegle Marmelos* Corr.	Stem Bark	
		Agnimantha-Clerodendrum phlomidis Linn.*f.*	Stem Bark	
		Shyonaka-Oroxylum Indicum Vent.	Stem Bark	12 gm
		Gambhari-Gmelina arborea Roxb.	Stem Bark	
		Patala- stereospermum suaveolens DC.	Stem Bark	
		Brihati- Solanum Indicum	Whole plant	
		Kantakari- Solanum Surattense Burm.*f.*	Whole plant	
		Shalaparni- Desmodium gangeticum DC.	Whole plant	
		Prishniparni- Uraria Picta DESV	Whole plant	
		Gokshura-Tribulus terrestris Linn.	Fruit	

Method of Preparation of *Triphaladi Kashaya*: The collected Raw material (Part used were described in table) were made into *Yavakuta* form. After that, the drugs were packed and kept in dry place at room temperature. The prepared *Yavakuta* of *Triphaladi Kashaya* was given to the patients.

Pharmacognostical Study: Drugs were identified and authenticated by the pharmacognosy laboratory, I.P.G.T. & R.A, GAU, Jamnagar. The identification was carried out on the basis of organoleptic features, morphological features and Powder microscopy of drug. Coarse powder dissolved in small quantity of distilled water was filtered through filter paper, filtrate studied under the microscope attached with camera, with and without stain. The microphotographs were also taken under the microscope. [9]

Physicochemical Parameters : *Triphaladi Kashaya* was analysed by using qualitative and quantitative parameters at Pharmaceutical laboratory, IPGT & RA, Gujarat Ayurved University, Jamnagar. The common parameters were mentioned for Ayurvedic Pharmacopia of India and CCRAS guidelines i.e. total ash value, Loss on drying, pH value, Water and alcohol soluble extractives were taken.[11] Presence of more moisture content in a sample can create preservation problem. Hence loss on drying was also selected as one of the parameters. [10, 11]

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 + ethyl acetate (9:1 v/v) solvent system. The colour and Refractive values of resolved spots were noted. In study of High-Performance Thin Layer Chromatography, Methanol extract of Sample was spotted on pre-coated silica gel GF254 aluminium plate as 6 mm bands, 5 mm apart and 1 cm from the edge of the plates, by means of a Camag Linomate V sample applicator fitted with a 100 µL Hamilton syringe. Toluene (7ml), Ethyl acetate (2ml), formic acid (0.5ml) was used as the mobile phase. After development, Densitometric scanning was performed with a Camag TLC scanner III in reflectance absorbance mode at 254 nm and 366 nm under control of win CATS software (v1.2.1 Camag). The slit dimensions were 6 mm x 0.45 mm and the scanning speed was 20 mm. [12]

RESULTS AND DISCUSSION

Pharmacognostical Study

Table no. 2 Organoleptic features of *Triphaladi Kashaya*

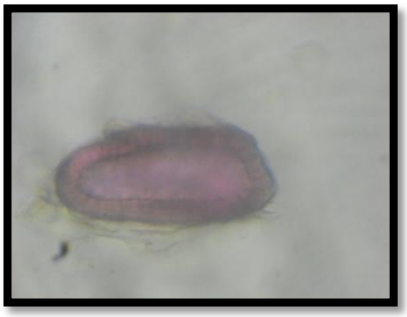
Physical Properties	***Triphaladi Kashaya***
Color	Pale yellow to Brown
Taste	*Kashaya* (Astringent)
Odor	Characteristic
Nature	Rough

Microscopic evaluation: Microsccopic evaluation was conducted of *Yavakuta*, Then dissolved it in the distilled water and studied under a microscope for the presence of characteristics of ingredient drugs like stone cells of *Haritaki*, Pitted stone cell of *Haritaki*, epicarp cells of *Haritaki*, Rosettem crystal of *Bibhitaki*, Scleroids of *Bibhitaki*, Trichome of *Bibhitaki*, Scleroids of *Amalaki*, Fibres of

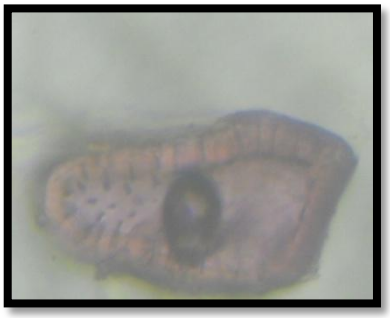
Varuna, Cluster crystal of *Varuna*, Rhomboidal crystal of *Varuna*, Fibres of *Shigru*, Group of stone cells of *Bilwa*, Group of stone cells of *Gambhari*, Lignified fibre of *Agnimantha*, Pitted vessels of *Kantakari*, Prismatic crystal of *Patala*, Rhomboidal crystal of *Bilwa*.

PLATE NO.1 PHOTOMICROGRAPHS OF *TRIPHALADI KASHAYA*

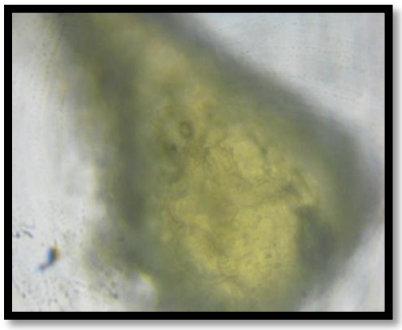
Triphaladi Yavakuta



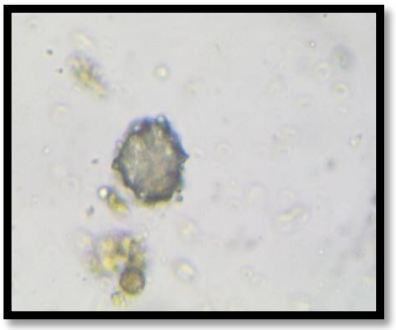
Stone cell of *Haritaki*



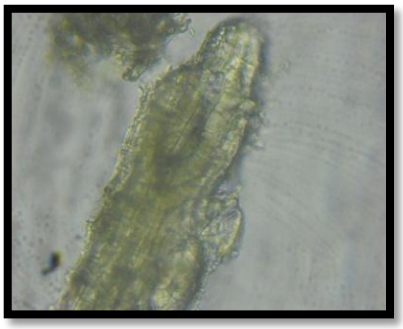
Pitted stone cell of *Haritaki*



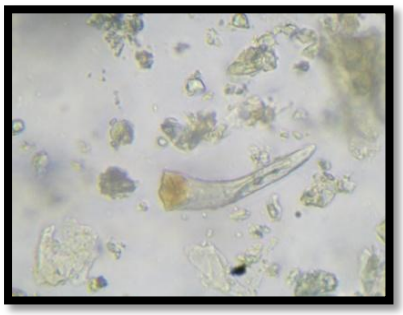
Epicarp cells of *Haritaki*



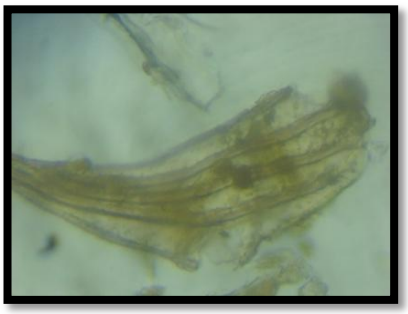
Rosettem crystal of *Bibhitaki*



Scleroides of *Bibhitaki*

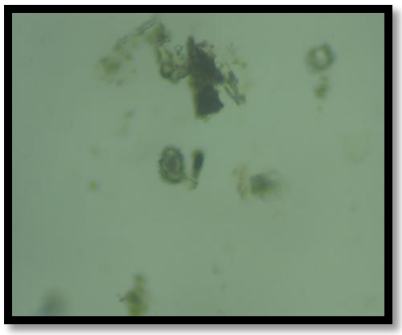


Trichome of *Bibhitaki*

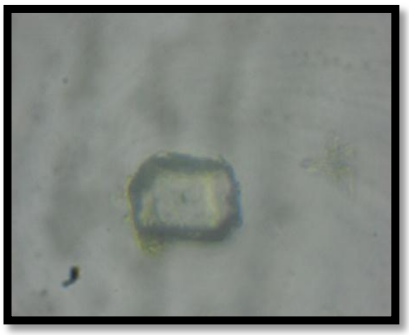


Scleroids of *Amalaki*

Fibres of *Varuna*



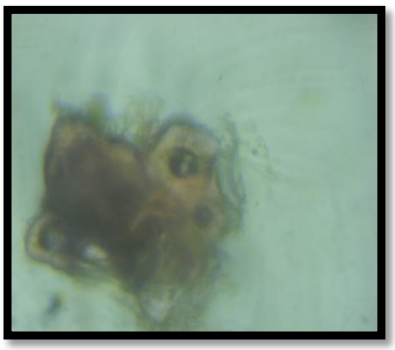
Cluster crystal of *Varuna*



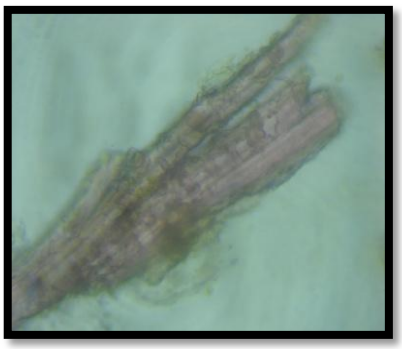
Rhomboidal crystal of *Varuna*

Fiber of *Shigru*

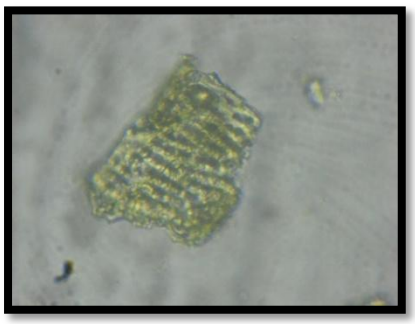
Group of stone cells of *Bilwa*



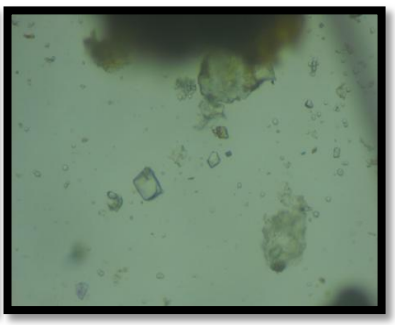
Group of stone cells of *Gambhari*



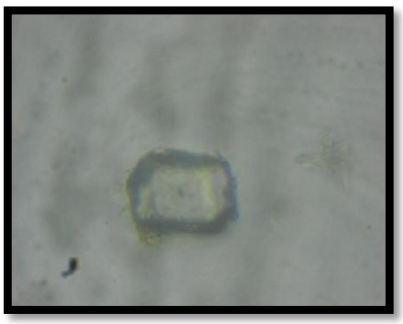
Lignified fiber of *Agnimantha*



Pitted vessels of *Kantakari*



Prismatic crystal of *Patala*



Rhomboidal crystal of *Bilwa*

Physicochemical Parameters: Physicochemical parameters of the *Triphaladi Kashaya* like Ash Value, Loss on drying, pH, Water soluble extract, Alcohol soluble extract, HPTLC were performed and evaluated.[13] The results are placed as below

.**Table No. 3 Physico-Chemical Parameters**

No.	Name of the test	Value
1	Ash Value	9.52%
2	Loss of drying (110°C)	15.4%
3	Water soluble extract	18.57%
4	Alcohol soluble extract	27.5%
5	pH value(5% aqueous solution)	6.5

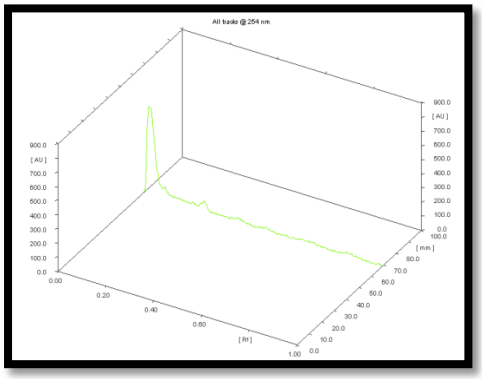
Qualitative Test of *Triphaladi Kashaya*: The methanol extract of the sample was analyzed qualitatively for different functional groups. Densitometric scanning of the HPTLC pattern showed 9 spots corresponding to hRf values 0.02,0.15,0.21,0.25,0.39,0.51,0.67,0.71,0.85 in short wave UV 254 nm and 7 spots corresponding to hRf values 0.02,0.17,0.40,0.46,0.52,0.71,0.85 obtained in long wave UV 366 nm [Table 4].

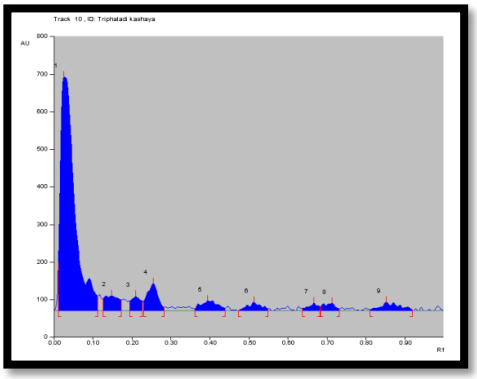
Table No. 4 Chromatographic Fingerprinting Of *Triphaladi Kashaya*

Wave length	No.of Spot	Rf value
254 nm	9	0.02,0.15,0.21,0.25,0.39,0.51,0.67,0.71,0.85
366 nm	7	0.02,0.17,0.40,0.46,0.52,0.71,0.85

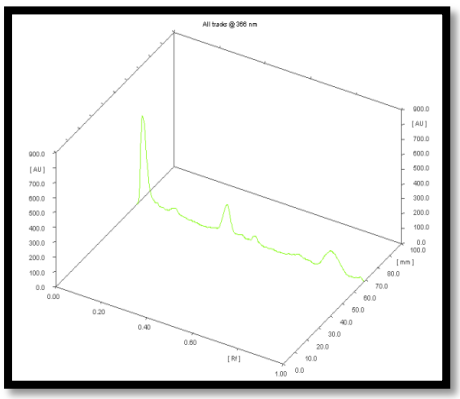
PLATE NO. 2: HPTLC RESULTS

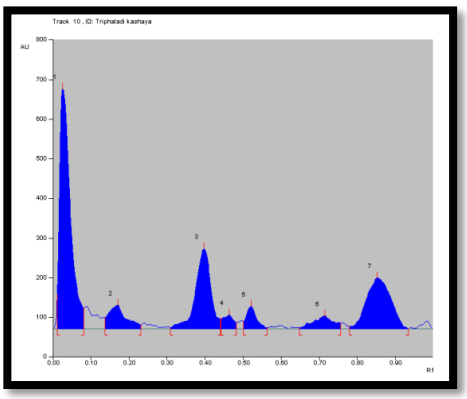
At 254 nm





At 366 nm





DISCUSSION: Coarse Powder microscopy of *Triphaladi Yavakuta* revealed the diagnostic characters like Pitted stone cell, Resetten crystal, Scleroids of *Amalaki*, Cluster crystal, Fibres, Corck cells, Lignified fibre, Prismatic crystal, Rhomboided crystal, Stone cells, Spiral vessels, Simple fibre, Simple trichome, Stellate trichome content which authenticate genuineness of the raw drugs of *Triphaladi Yavakuta*. Taste of *Triphaladi Yavakuta* was *Kashaya* (Astringent), *Rasa* because having astringent taste results in Astringent of *Kwatha*. Odour is Characteristic. Moisture contents should be of minimum to prevent degradation of product. Excess of water in formulation encourage microbial growth, presence of fungi or insects and deterioration following hydrolysis. Ash

values are the criteria to judge the identity and purity of crude drugs were total ash, water soluble are considered. *Triphaladi Yavakuta* contained 9.52% w/w total ash. The results showed that *Triphaladi Yavakuta* is free from unwanted organic compounds and production site was good enough keeping sample free from dust and other solid matters. The 18.57% w/w of water soluble extractives and 27.5% w/w methanol soluble extractives were present in *Triphaladi Yavakuta* indicating that the drug is having good solubility in water. In HPTLC study 9 spots at 254 nm and 7 spots 366 nm were obtained, indicating its possible components of matrix which may possess its therapeutic effect.

CONCLUSION: The ingredients were identified Pharmacognostically and were used for the preparation. The formulation was subjected to Pharmacognostical, physicochemical, HPTLC studies. Most of the cellular constituents i.e. Pitted stone, Prismatic crystal, Epicarp, Rhomboidal crystal are freely distributed. It is inferred that the formulation meets the minimum quality standards as reported in the API at a preliminary level. Additional important analysis will be required for the identification of active chemical constituents of the current test drug**.**

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