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PHARMACOGNOSTICAL AND PHARMACEUTICAL EVALUATION OF *YAVADILEPA*

Soniya Parmar*[1], Darshna H. Pandya[2], Harisha C. R.[3] and V. J. Shukla[4]

[1]PG Scholar, Department of Rog Nidan Evam Vikriti Vigyan.

[2]Associate Professor, Department of Rog Nidan Evam Vikriti Vigyan.

[3]Head, Pharmacognosy.

[4]Head, Pharmaceutical Chemistry Lab., IPGT & RA, GAU, Jamnagar.

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***Corresponding Author**
Dr. Soniya Parmar
PG Scholar, Department of Rog Nidan Evam Vikriti Vigyan.

ABSTRACT

Teen years are the most challenging and exciting years of one's life, where social acceptance and peer pressure play a major part in the teens self-image. Our face is said to be the mirror of general health, it is important to pay attention to this part of the body. *Acharya Sushruta* was the first person, who described *Yauvan Pidika*, under the heading of *'Khudrarogas*. The present study deals with the standardization of *Yavadilepa* through the pharmacognostical and pharmaceutical standards. The presence of epidermal cells of *Yava*; stone cell, cork cell, rhomboid crystal of *Lodhra* and crystal fiber, stone cell, rhomboid crystal, dark brown tannin contain, crystal fibre of *Yashtimadhu* were observed in the microscopy of drug combination. Pharmaceutical analysis showed that Loss on drying 10.83% w/w, Ash value 5.9% w/w, Water solube extract 13.2%, Alcohole solube extract 7.84%, pH 6.5. Analytical study showed 7 spots at 254 nm and 7 spots at 366 nm. **Conclusion:** Pharmacognostical study revealed genuinity of raw drugs. Physicochemical and HPTLC studies inferred that the formulation meets the minimum quality standards. The inference from this study may be used as reference standard in the further quality control researches.

KEYWORDS: HPTLC, Pharmacognosy, Pharmaceutics, *Lodhra, Yashtimadhu, Yava*.

INTRODUCTION

Ayurveda is a very ancient, trusted worldwide plant based system of medicines. In *Ayurveda*, this disease is described as *Mukhdushika* or *Yuvan Pidika*. It is also called *Tarunya Pidika*.

According to *Ayurveda*, the *Shalmali* thorns like eruptions on the face due to vitiation of *kapha, vata* and *rakta* which are found on the face of adolescents are called *Mukhdushika* or *Yuvanpidika.*[1] In present study *Yavadilepa*[2] is selected as local application (face pack). Selection of *Yava (Horedeum vulgare), Lodhra(Symplocos racemosa) & Yashtimadhu (Glycyrrhiza glabra) choorna* is based on repeated recommendation of different *Acharyas* on *Yauvanpidika.* Till date no any research have been done on Pharmacognostical and Pharmaceutical evaluation of *Yavadilepa.* Therefore, the present study has been undertaken to evaluate and establish various quality control parameters of *Yavadilepa* as per Indian Pharmacopeia pharmaceutical and pharmacognostical investigation like total ash value, loss on drying, chemical constituents and microscopic determination. This paper deals in establishment of quality control parameters of *Yavadilepa*. In the present work was carried out to standardize and evaluate the pharmacognostical as well as to analyze the physico-chemicalproperties of *Yavadilepa*.

MATERIALS AND METHODS

Collection of raw materials

Raw drugs of *Yavadilepa* were procured from Jamnagar and were identified and authenticated at Pharmacognosy laboratory, IPGT and RA, Jamnagar.

Method of Preparation of *Yavadilepa*

All the pre authenticated raw drugs were taken for the preparation. All components were taken in equal part and grinded with the help of electric motor and fine powder was prepared.[3]

Table 1: *Yavadilepa (Chakradatta – Kshudrarogadhikar* 54/50)

Name of the drug	Latin name	Ratio	Part use
Yava	*Hordeum vulgare* L.	1 – part	Seed
Lodhra	*Symplocos racemosa* Roxb.	1 – part	Bark
Yashtimadhu	*Glycyrrhiza glabra* Linn.	1 – part	Root

Pharmacognostical evaluation

As per *Ayurvedic* Pharmacopeia of India, 3 raw drugs were identified and authenticated by the Pharmacognosy Lab. The identification was carried out based on the organoleptic features and powder microscopy of the finished product. Later, pharmacognostical evaluation of *Yavadilepa* was carried out. *Yavadilepa* dissolved in small quantity of distilled water, studied

under the Carl zeiss trinocular microscope attached with camera, with stain and without stain.[4] The microphotographs were also taken under the microscope.

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 in Pharmacognosy laboratory, I.P.G.T. & R.A., Gujarat *Ayurved* University, Jamnagar, Gujarat, India.[5]

Physico-chemical analysis

Yavadilepa was analyzed using various standard physico-chemical parameters such as Loss on drying, water soluble extract, alcohol soluble extract etc.[6]

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 (14:4:2) solvent system and observed under visible light. The colour and R_f values of resolved spots were noted.[7] Analytical study showed 7 spots at 254 nm and 7 spots at 366 nm.

RESULTS AND DISCUSSION

Pharmacognostical evaluation

Organoleptic characters

Organoleptic parameters like Colour, odour, taste and touch were scientifically studied and results are depicted in the table 2.

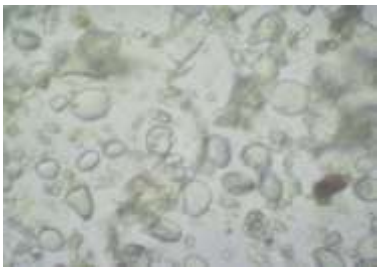
Table 2: Organoleptic Property of *Yavadilepa*

Sr.No.	Characters Results	Results
1	Colour	Light creamish brown
2	Odour	Light sweetish
3	Test	Sweet
4	Touch	Fine powder

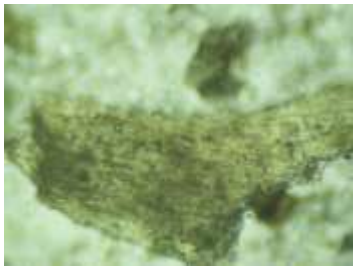
Microscopic characters

Diagnostic characters were observed under the microscope were simple starch grain; epidermal cells; epicarp cells of *Yava*, stone cell; cork cell tannin contain; rhomboid crystal; lignified stone cell of *Lodhra* and pitted vessels; fibers; dark brown tannin contain; stone

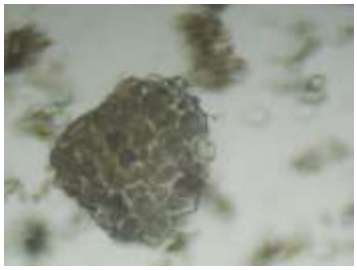
cells; rhomboid crystal; lignified stone cell ;lignified pitted vessels; lignified fibers ; group of stone cells of *Yashtimadhu*.[Fig.1].



Starch grain of *Yava*



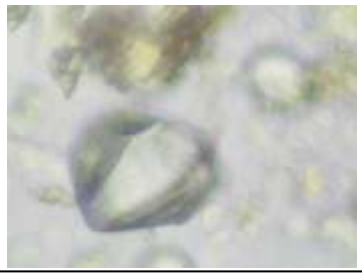
Epidermal cell of *Yava*



Epicarp cell of *Yava*

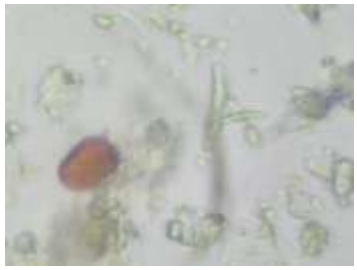
Cork cell of *Lodhra*

Lignified stone cell *Lodhra*



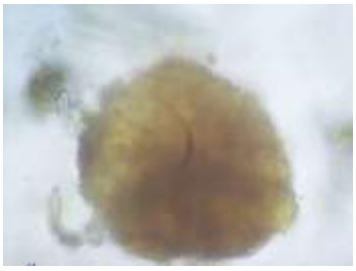
Rhomboid crystal of *Lodhra*

Stone cell of *Lodhra*

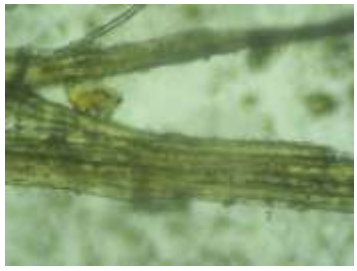


Tannin contain of *Lodhra*

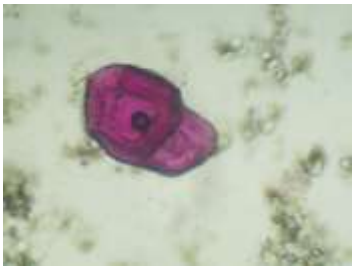
Crystal fiber of *Yashtimadhu*



Dark brown tannin contain of *Yashtimadhu*

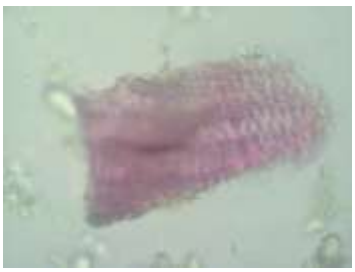


Fibers of *Yashtimadhu*



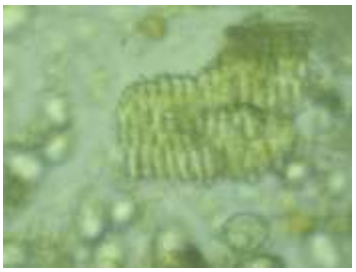
Group of stone cells of *Yashtimadhu*

Lignified fibers of *Yashtimadhu*

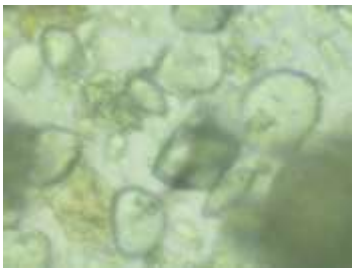


Lignified pitted vessels of *Yashtimadhu*

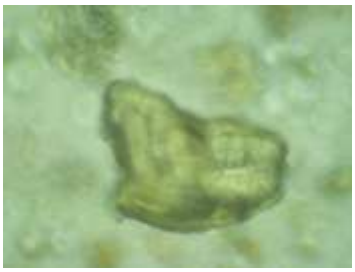
Lignified stone cell of *Yashtimadhu*



Pitted vessels of *Yashtimadhu*



Rhomboid crystal of *Yashtimadhu*



Stone cell of *Yashtimadhu*

Fig. 1 Microphotographs of *Yavadilepa*

Physicochemical analysis

Physicochemical analysis of *Yavadilepa* i.e. Loss on drying, Ash value, water and methanol soluble extract, pH, particle consistency were scientifically studied and the results were detailed in Table 3.

Table 3: Physicochemical assay of *Yavadilepa*

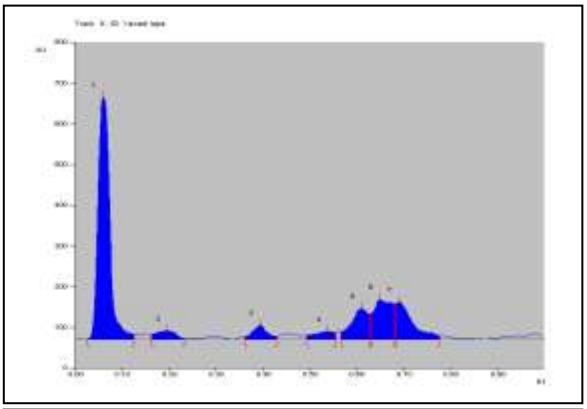
Sr. No.	Test	Result
1	Loss on Drying	10.839 % w/w
2	Ash Value	5.948 % w/w
3	Water soluble extract	13.2 % w/w
4	Methanol soluble extract	7.84%w/w
5	pH	6.5

HPTLC Study

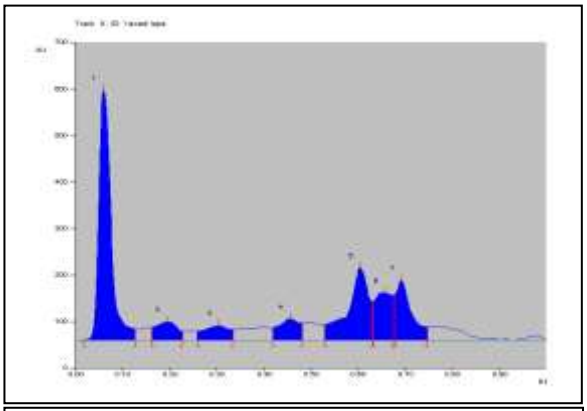
Chromatographic study (HPTLC) was carried out under 254 and 366 nm UV to establish Finger printing profile. Chromatogram shows 7 prominent spots at 254nm with maximum R_f value 0.06, 0.20, 0.39, 0.54, 0.61, 0.65, 0.69 and 7 spots at 366nm with maximum R_f value 0.06, 0.19, 0.30, 0.46, 0.60, 0.66, 0.69.

Table No. 4: Chromatographic Fingerprinting Of *Yavadilepa*

Short UV Radiatio 254 nm		Long UV Radiation 366 nm	
No. of spot separated	**Retention factor R_f**	**No. of spot separated**	**Retention factor R_f**
7	0.06, 0.20, 0.39, 0.54, 0.61, 0.65, 0.69	7	0.06, 0.19, 0.30, 0.46, 0.60, 0.66, 0.69



254nm Peak display



366nm Peak display

Fig. 2: HPTLC: at 254 nm & 366 nm of *Yavadilepa*

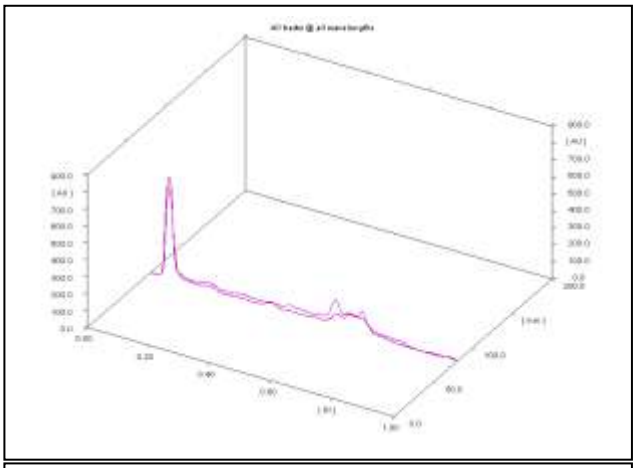


Fig 3: 254nm & 366nm 3D

Fig. 3. HPTLC: Densitogram at 254 nm & 366 nm of *Yavadilepa*

CONCLUSION

Pharmacognostical study findings confirm that all characters were found in ingredient drugs of *Yavadilepa.* The physicochemical analysis 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 *Yavadilepa.*

REFERENCES

1. Sushruta, Sushruta samhita "Ayurved Tatva Sandipika" commentary, edited by Dr. Ambikadatta Shastri, Chaukhmbha Sanskrit Publication,Varansi-221001(India), reprint 2014, Nidansthan -13, pg.no.372.
2. Chakradatta of Sri Chakrapani Datta with the 'Padarthabodhini' Hindi Commentary by Vaidya Ravidatta sastri, Chaukhmbha Surbharati prakashan, Varanasi-211001, reprint-2006, kkshudrarogadhikar 54/50. Pg.no. 216.
3. Anonymous. The Ayurvedic Formulary of India, part II, vol 2nd ed. Ministry of Health and Family Welfare, department of AYUSH, Government of India. 2001. P.38.
4. Khandelwal KR. Practical Pharmacognosy techniques and experiments. 19th ed. Pune: Nirali Prakashan; 2008. p. 149-66.
5. Trease and Evans, Pharmacognosy, 15th Ed., W.B. Sunders Company Ltd., 1996; 569, 570.
6. Ayurvedic Pharmacopoeia of India PDF-1, Govt. of India, Ministry of Health and Family Welfare, Delhi, 2007; 5: appendix-2.2.9: 214.
7. Stahl E; Thin-layer chromatography a laboratory hand book .2nd edition. Springer-Verlag New York, 1969; 125-133.