

PHARMACOGNOSTIC AND PHARMACEUTICAL ANALYSIS OF *JYOTISHMATI TAILA*

R Manu¹, C R Harisha², V J Shukla³ and Alankruta R Dave¹

Department of Kayachikitsa, IPGT & RA, GAU, Jamnagar, Gujarat, India.

Pharmacognocny Laboratory, IPGT & RA, GAU, Jamnagar, Gujarat, India.

Pharmaceutical Laboratory, IPGT & RA, GAU, Jamnagar, Gujarat, India.

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ABSTRACT

Jyotishmati, *Celastrus paniculatus* willd. belongs to family Celestrace, identified as one among Medhya dravya, a drug of choice used for memory enhancement. Seed oil is used as stimulant & in beri beri; the fruit is used in rheumatism, gout & skin disorders. Leaves are used in fever & as nervine tonic, irregular menses. Bark is used as Abortifacient. Seeds are laxative, emetic, aphrodisiac. Root is used in Pneumonia, Cancer, Snake bite & Epilepsy. Present study of Jyotishmati powder shows that presence of epidermal cells, tannin, prismatic crystals of calcium oxalate. Physicochemical parameters show that refractive index at 40°C 479% w/w. Saponification value 182.71% w/w which was similar to that of standard value.

Keywords: *Jyotishmati*; seeds; pharmacognostical; phytoche.

INTRODUCTION

Jyotishmati, *celastrus paniculatus* willd. celestrace, Known as staff tree, in Hindi it is called as Malakanguni. Peeta Taila, Paravata Padi, & Kangunika are its common synonymous terms. It is a large woody climbing shrub distributed almost all over India up to an altitude of 1800m. Its properties are katu tikta rasa, sara tikshna guna, ushna virya, katu vipaka. Actions are vatakapha shamaka, Shirovirechaka, Medhya, Budhiprda, Matiprada, Agnivardhaka, Vamaka.¹ Its seeds are used in Vatavyadi, Smritidaurbalya & Shwitra, Yogaratnakara has used its seed oil as a bhavana dravya in preparing *Smritisagara Rasa* in *Apasmararogadhikara*.² It is mentioned in Shirovirechanopaga & Arkadi ganadravya in our classical texts. For the first time *Jyotishmati taila* studied for its pharmacognostical and phytochemical analysis.

MATERIAL AND METHODS

Collection, identification and authentication of raw drugs

The raw drug for the study was procured from the Pharmacy Amrut Kesari Dipo, Bangaluru. It was identified and authenticated by the Pharmacognosy lab IPGT & RA, Gujarat Ayurved University, Jamnagar. The identification was carried out based on the morphological features.

Organoleptic Study

Organoleptic features i.e. Taste, colour and odour are recorded by sensory organs.³

Powder Microscopy

Seeds were crushed to powder through #40 mesh. First studied with distilled water then stained with

phloroglucinol and Conc HCl. microphotographs were taken under Carl Zeiss binocular microscope attached with camera.⁴

Physicochemical parameters

Jyotishmati taila was analyzed by using qualitative and quantitative parameters such as specific gravity, saponification value, iodine value, acid value and refractive index.⁵

HPTLC was done with visualization under UV radiation 254nm & 366nm post chromatographic visualization spray with Libermann buchard reagent.⁶

RESULTS AND DISCUSSION

Method of Preparation of *Jyotishmati Taila*

Oil got prepared from "Lakshmi Pharma" Jamnagar, expression method was followed.

Pharmacognostical evaluation

Morphological character: Dried ripe seeds more or less covered by orange red crusty aril, seeds without aril also present measuring 5-6mm in length & 2.5-3.35mm in breadth. Seeds are trigonous to hexagonal in shape, yellowish orange in colour. Plate 1 Figure 1.

Figure 1. *Jyotishmati*; herb, seeds, powder.



Organoleptic characters of Powder: Organoleptic characters of powder like colour, taste, odour and touch were recorded and the results are displayed in Table 1.

Powdered microscopy: Diagnostic characters of the powder shows epidermal cells, tannin, prismatic crystals of calcium oxalate, vascular strands, stone cells, oil

*Corresponding Author:

Dr Manu R

Ph D Scholar

Department of kayachikitsa, IPGT&RA,

Gujarat Ayurved University,

Jamnagar-361 008, Gujarat, India.

Contact no: +91-9574914567; E-mail: dr.manurajgopal@gmail.com

globules, fiber and aleurone grains. Plate 1. Figure 2-4.

Table 1. Organoleptic Parameters of *Jyotishmati* seeds

S No	Physical Properties	<i>Jyotishmati</i> seeds
1	Odour	Unpleasant
2	Taste	Bitter
3	Colour	Yellowish orange
4	Touch	Smooth

Figure 2. Prismatic crystal; Epidermal cells; Annular vessels

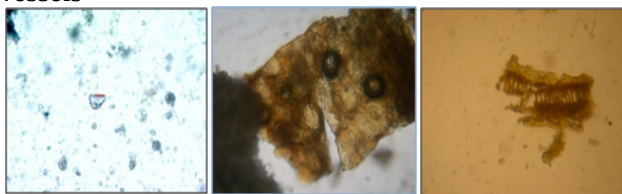


Figure 3. Aleurone grains; Aluegrains; Oil globules

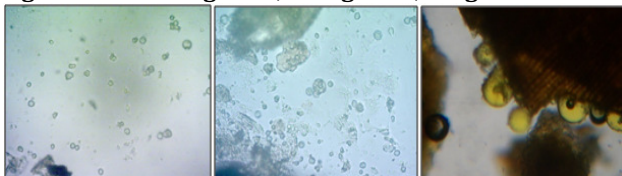


Figure 4. Oil glands; Stone cells; Fiber

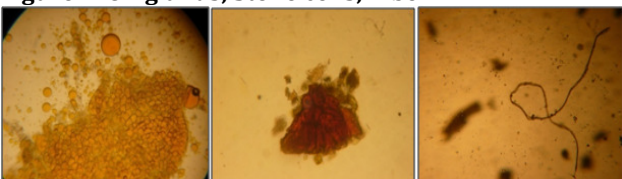


Table 3. HPTLC studies on *Jyotishmati* taila

S No	Spot	At 254nm	At 366nm	After spry
1	7	4.4, 11.6, 16.2, 15.0, 7.6, 7.5, 14.4	-	-
2	4	-	6.2, 20.8, 12.2, 9.3	-
3	4	-	-	0.22, 0.38, 0.40, 0.48

Figure 5. Densitogram curve of methanol extract of *Jyotishmati* taila at 254nm.

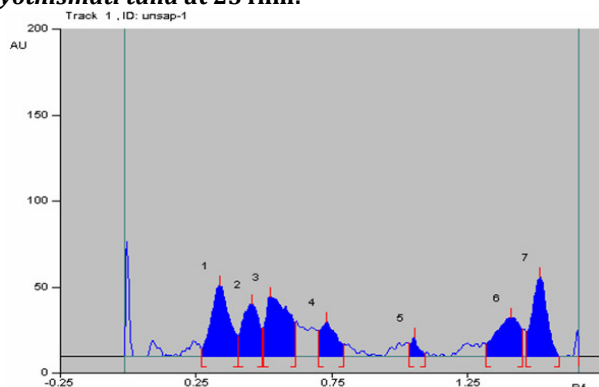
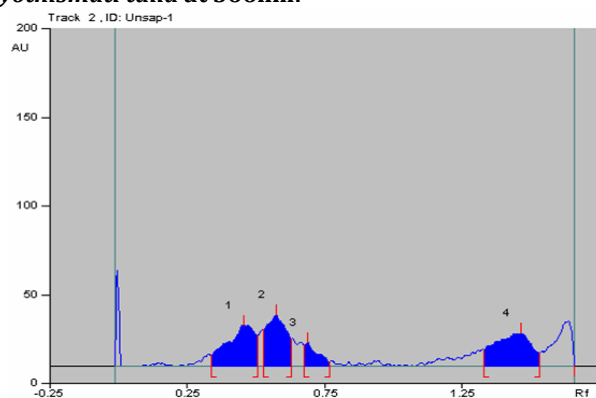


Figure 6. Densitogram curve of methanol extract of *Jyotishmati* taila at 366nm.



Phytochemical assay of *Jyotishmati* taila

Physicochemical parameters: The taila was evaluated for physico chemical parameters like Refractive index at 40 c, Specific gravity at 40/40 c, Acid Value, Iodine Value and Saponification value. The results are sited at Table 2.

Table 2. Physicochemical Parameters of *Jyotishmati* taila

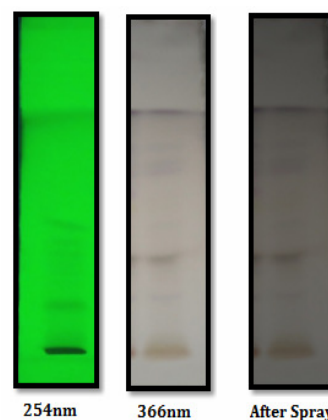
S No	Test	Result
1	Refractive index at 40°C	1.479%w/w
2	Specific gravity at 40/40°C	0.9170%w/w
3	Acid value	1.169% w/w
4	Iodine value	59.85% w/w
5	Saponification value	182.71%w/w

Analytical study showed all the parameters like refractive index, saponification value, acid value, iodine value and specific gravity all were similar as per standard value.

The findings of high power thin layer chromatography of *Jyotishmati* taila under 254nm and 366nm UV light are as follows:

HPTLC of *Jyotishmati* taila shows 4 spots under 366 nm UV at hR_f 6.2, 20.8, 12.2, 9.3 in track 1. In track 2, four spots were noted at hR_f 0.22, 0.38, 0.40, 0.48. Whereas under 254 nm UV seven zones visible at hR_f 4.4, 11.6, 16.2, 15.0, 7.6, 7.5, 14.4 in track 1. While in Track 2, four spots were noted at hR_f 0.22, 0.38, 0.40, 0.48. High Performance Thin Layer Chromatography of *Jyotishmati* taila after spraying Liberman Buckard Reagent followed by heating and then visualized in day light shows 4 prominent spots at hR_f 0.22, 0.38, 0.40, and 0.48 (Table 3; Figure 5, 6, 7).

Figure 7. TLC Plates as seen at 254nm, 366nm and after spray



CONCLUSION

The seeds of the *jyotishmati* were identified for its genuenity through the pharmacognostical study with crude drug & microscopic analysis with the powdered drug & followed by pharmaceutical analysis through HPTLC, qualitative & quantitative parameters of *jyotishmati* taila & when compared with standard value were correlating each other.

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