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PHARMACOGNOSTICAL AND PHARMACEUTICAL EVALUATION OF SHIVALINGI BEEJA CHURNA

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ABSTRACT

Event of infertility, couples turn to the traditional medicine which is being used over the centuries for succour as ayurveda holds high esteem and trust in this field. herbal drugs are cheaper, easily available and with a meagre fear of any side effects. many herbs effective for infertility are also used in folk practice which often goes unnoticed. *shivalingi beeja* is one such unnoticed folk medicine that shows good results for counteracting infertility. it is a uterine tonic and improves the chances of conception in women suffering from infertility. an effort has been made in this paper to scientifically review and explain the role of *shivalingi beeja* in infertility of either sex hypothetically. **aim:** the present study was aimed at setting up a standard profile of *shivalingi beeja churna* which was prepared subjecting it to detailed pharmacognostical, physicochemical and phytochemical evaluation. **materials and methods:** *shivalingi beeja* were collected from the ayurvedic medical in local market of jamnagar, were identified and authenticated at pharmacognosy laboratory, ipgt and ra, jamnagar and *shivalingi beeja churna* was prepared in the pharmacy, gau, jamnagar. **results:** result of pharmacognostical study shows that the presence of oil gobules, pallisade cell, aleurone grains, ligniphied annular vessels and scleride. pharmaceutical analysis showed that loss on drying 5.4 % w/w, ph 6.5.analytical study showed 10 spots at 254 nm and 3 spots at 366 nm. conclusion: the findings of the study will be useful in the identification and standardization of the *shivalingi beeja churna.*

KEYWORDS: Shivalingi Beeja Churna,HPTLC, Pharmacognosy, Pharmaceutics, Infertility.

INTRODUCTION

Infertility define as a failure to conceive within one or more years of regular unprotected coitus.[1] The male is directly responsible in about 30-40%,the female in about 40-55%,both are responsible in 10%.According to FIGO manual(1990) causes are Tubal and peritoneal factor(25-35%),Ovulatory factor (30-40%) and Endometriosis(1-10%).[2] Infertility varies across the regions of the world and it has been estimated to affect 8 to 12% couples worldwide. The WHO has estimated the overall prevalence of primary infertility in India to be between 3.9 and 16.8%.In *Ayurveda acharya Sushruta* has describe four essential factors for healthy progeny like *Rutu,Kshetra,Ambu,Beeja*.[3] Here the *Beeja* is taken as *Antahpushpa* i.e. ovum. So anovulation can be included under. *Beeja Dushti.* Act of ovulation is regulated by *Vata* especially *Apana Vata*. *Shivalingi Beeja* is one such unnoticed folk medicine that shows good results for counteracting infertility. It is a uterine tonic and improves the chances of conception in women suffering from infertility. So, here *Shivalingi Beeja Churna* was selected for treatment of the infertile patient.

MATERIALS AND METHOD

Collection of Raw Drug

Shivalingi Beeja were collected from Ayurvedic medical in local market of Jamnagar were identified and authenticated at pharmacognosy laboratory,IPGT and RA, Jamnagar. The ingredients and parts used in the preparation of the final products are listed in Table No. 1.

Preperation of the Drug

Powder of *Shivalingi Beeja* was prepared in the pharmacy of Gujarat Ayurved University, Jamnagar.

Table 1: Showing contents of *Shivalingi Beeja churna.*

Drug	Botanical Name	Part Used	Ratio
Shivalingi	Bryonia laciniosa linn.	Beeja	1

PHARMACOGNOSTICAL STUDY

The pharmacognostical study comprise of organoleptic study of finished product, Shivalingi Beeja Churna.

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.[4]

Microscopic study

Shivalingi Beeja was powdered and dissolved with water and microscopy of the sample was done without stain and after staining with phloroglucinol + HCL.Microphotograph of Shivalingi Beeja Churna was teken under Corl-zeiss trinocular microscope.[5]

PHARMACEUTICAL EVALUATION

Physico-chemical parameters

This *Churna* was analyzed using various standard physicochemical parameters such as, Loss on drying[3], pH[4], water soluble extract[5], and methanol soluble extract[6] as per API[7] at the pharmaceutical chemistry lab, IPGT& RA.[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 Rf values of resolved spots were noted.[7] Analytical study showed 10 spots at 254 nm and 3 spots at 366 nm.[7]

RESULTS AND DISCUSSION

Microscopic Characters of Shivalingi Beeja Churna

Microscopic evaluation of *Shivalingi Beeja Churna* was conducted, Characters were noted down and microphotographs were taken they are Fig-01 *Churna* of *Shivalingi Beeja*, Fig-02 Aleurone grains, Fig-03 Group of annular vessels, Fig-04 Iodine stained starch grains, Fig-05 Ligniphied annular vessels, Fig-06 Ligniphied sclerides, Fig-07 Ligniphied epicarp cell, Fig-08 Oil gobuls, Fig-09 Pallisade cell, Fig-10 Parenchyma cell along with starch grain, Fig-11 Sclerides, Fig-12 Simple fibers, Fig-13 Simple starch grain withy Hylum,

Plate 1: Microphotographs of Shivalingi Beeja Churna.

Fig 1.Churna

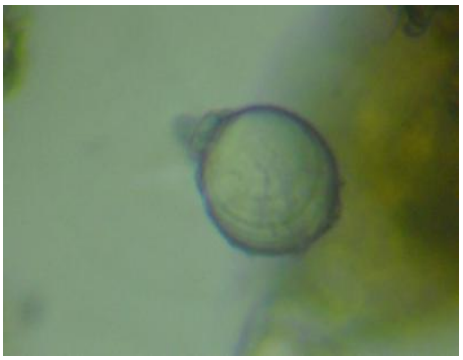


Fig. 2. Aleurone Grains.

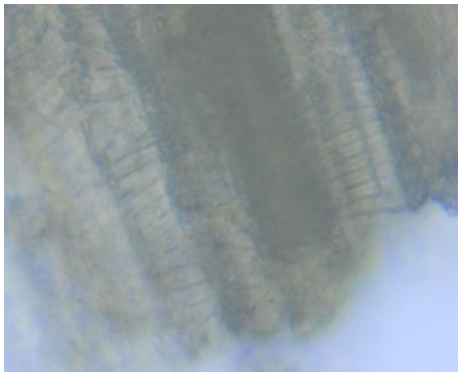


Fig. 3. Group of Annular vessels

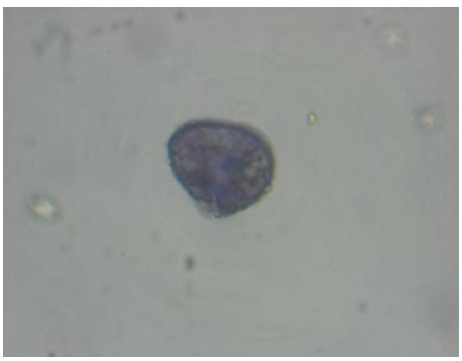


Fig. 4.Iodine stained starch grain

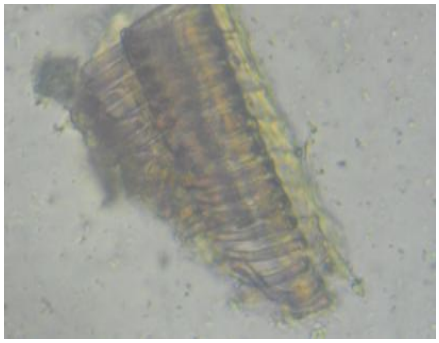


Fig. 5. Ligniphied Annular Vessels

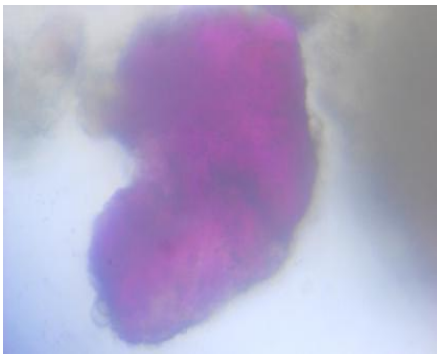


Fig. 6. Ligniphied Sclerides

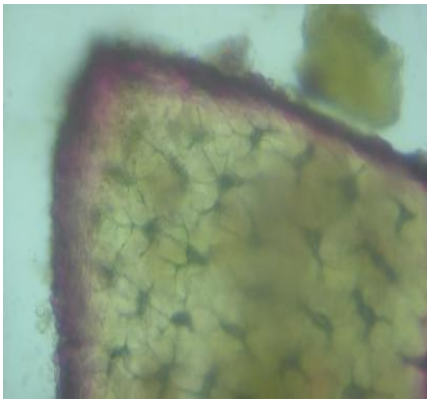


Fig. 7. Ligniphied Epicarp Cell

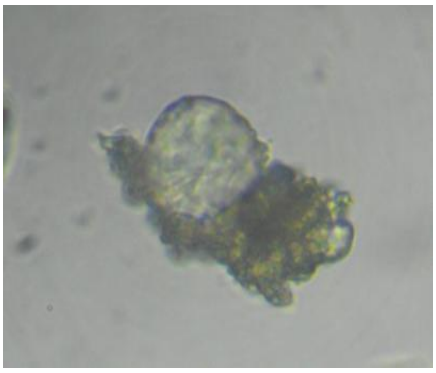


Fig. 8. Oil Globules

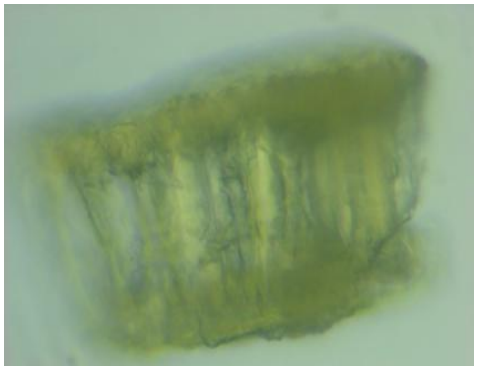


Fig. 9. Palisade cell

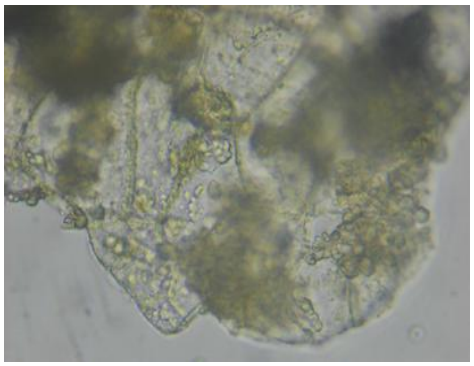


Fig. 10. Parenchyma cell along with starch grain

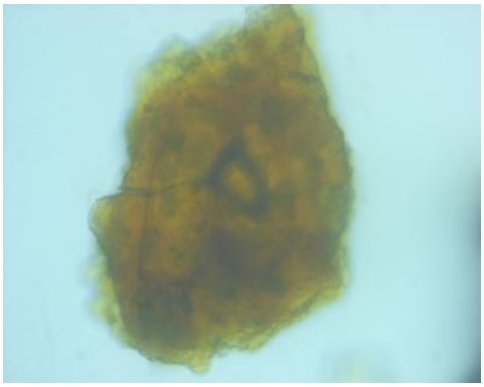


Fig. 11. Sclerides

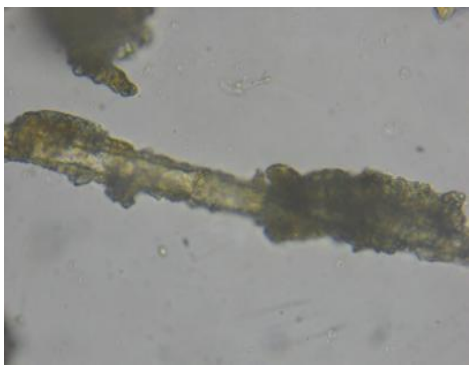


Fig. 12. Simple Fibers

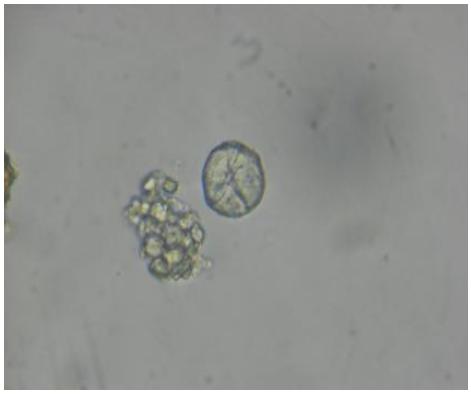


Fig. 13. Simple starch grain with Hylum

Pharmaceutical Evaluation

Organoleptic parameters of *Shivalingi Beeja Churna: Sparsha* - Consistency, *Rasa* – Taste, *Rupa* -Colour, *Gandha* - Odour were studied and details are placed in Table - 2.

Table 2: Showing Organoleptic characteristics of *Shivalingi Beeja Churna.*

Sr.No	Parameters	Shivalingi Beeja Churna
1	Colour	Dark brown
2	Taste	Bitter,Astringent
3	Odour	Characteristic
4	Consistency	Fine Fibrous powder

Physico-Chemical parameters of the *Shivalingi Beeja Churna* like pH, Loss on drying, water soluble extract, and methanol (Alcohol) soluble extract all were found are placed in Table-3.

Table 3: Showing Physico-Chemical parameters of *Shivalingi Beeja Churna.*

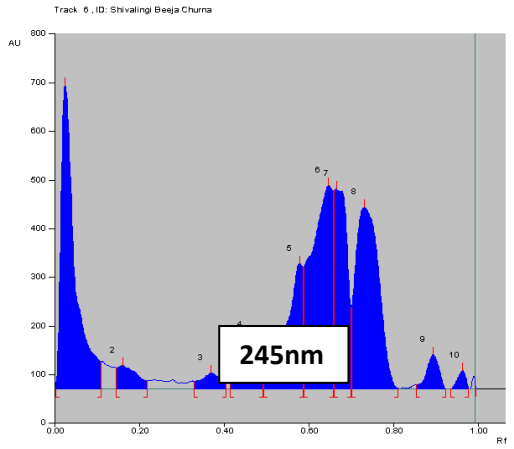
Sr. No.	Test	*Shivalingi Beeja Churna*
1	Loss on drying	5.4 % (w/w)
2	Water soluble extract	17.50 % (w/w)
3	Alcohol soluble extract	11.72 % (w/w)
4	pH(by pH meter)	6.5
5	Ash value	16.65 % (w/w)
6	Acid in Soluble	8.1 % w/w

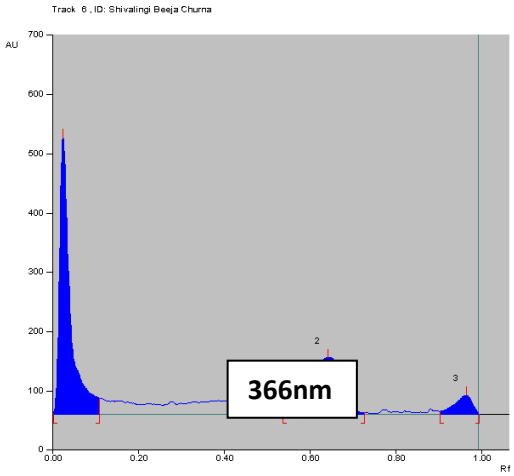
HPTLC profile of methanolic extract of *Shivalingi Beeja Churna* was done and details of number of spots and Rf value are given in Table-4 (Plate-2).

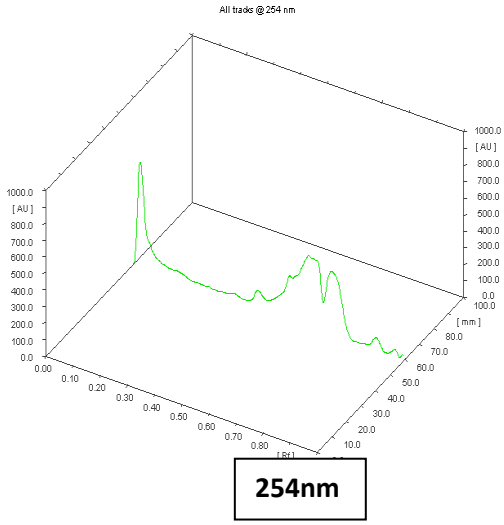
Table 4: HPTLC profile of *Shivalingi Beeja Churna.*

Ultra Violet Rays	Number of spot	Rf value
254nm	10	0.00,0.15,0.33,0.41,0.49,0.59,0.66,0.70,0.85,0.94
366 nm	3	0.00,0.54,0.90

Plate 2: Densitogram of *Shivalingi Beeja Churna* at 245 nm and 366 nm.







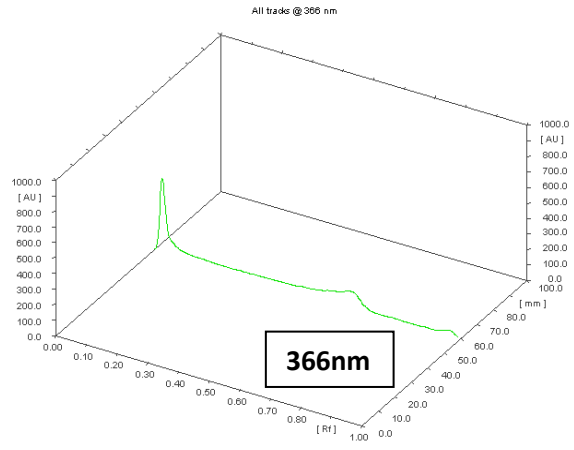


Fig. 3: Three dimensional Densitogram of *Shivalingi Beeja Churna* at 254 nm and 366 nm.

DISCUSSION

Its pharmaceutical properties had to be studied; hence the formulation was subjected to minimum Pharmacognostical and Pharmaceutical analysis. Pharmacognostical evaluation of Shivalingi Beeja Churna showed the specific characters of. Features found in microscopy such as Oil Globules, Simple starch grain with hylum, Parenchyma cell along with starch grain, Sclerides, Palisade cell, Group of Annular vessels, Aleurone grains,Iodine stained starch grains, Simple fibers, Ligniphied Annular vessels, Ligniphied Sclerides,Ligniphied Epicarp cell. Considering the physicochemical parameters, pH of prepared drug was found Acidic i.e.6.5. The quantitative pharmaceutical analysis was in normal range and in accordance with those mentioned in reference books

CONCLUSION

Pharmacognostical study findings confirm that all characters were found in *Shivalingi Beeja Churna.* 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 *Shivalingi beeja Churna*. The results of this study may be used as the reference standard in further research undertakings of its kind.

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