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PHARMACOGNOSTICAL AND PHARMACEUTICAL ANALYSIS OF *SHIRISHA ASHWAGANDHADI CHURNA*

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ABSTRACT

Shirisha Ashwagandhadi Churna is a *Churna Kalpana* but it is formulated as *Churna* preparation due to its, Efficacy, easy palatability of patients. *Shirisha Ashwagandhadi Churna* having *Deepan-Pachana*, *Tridosha Shamaka* and *Rasayana* property and its preparation i.e. *Shirisha Ashwagandhadi Churna* having *Tridosha Shamaka* and *Rasayana* property. Till date no published data is available on pharmacognostical and analytical profile of *Shirisha Ashwagandhadi Churna*, So present study is planned. Allergic rhinitis is a most common annoying problem of day to day life affecting patient's quality of life. The original recipe contains *Shirishadi Kwatha* (Decoction) and *Ashwagandhadi* compound. This compound was formulated by Late Pandit Shiv Sharma. In the present era, people only accept such elegant, palatable and easy to consume and carry formulations. To overcome such difficulties; to convert classical formulations into elegant forms which are easy, acceptable and therapeutically viable. At the same time, with an intention to increase palatability, shelf life and to make a drug according to SMP and to do its Pharmaceutical and Pharmacognostical evaluation, study was carried out. Previous study was done to standardize manufacturing process of this *Avaleha* By Dr. Parth Dave et.al. The presence of Annular vessels, Bottle neck shaped stone cells, Simple and compound starch grains, Stellete trichome, Pitted stone were observed in the microscopy of prepared formulation. Physicochemical analysis showed that Total solid content was 7.24% and Acid insoluble ash was 2.39%. pH was 6.5. Total sugar estimation was 57.98%. HPTLC study showed 07 spots at 254 nm with Rf values and 08 spots at 366 nm with Rf values.

KEYWORDS: Allergic rhinitis, Pharmacognosy, *Shirisha Ashwagandhadi churna, Rasayana, Deepan, Pacahana.*

INTRODUCTION

Ayurveda, a part of cultural heritage of India, is widely respected for its uniqueness and global acceptance as it offers natural ways to treat diseases and promote healthcare.[1] Classical text books of Ayurveda hold a number of remedies for different pathologies. Though classical formulations are effective; these are known to possess certain inconveniences. To overcome such difficulties; there is a need to convert classical formulations into elegant forms that are easy, acceptable and therapeutically viable. At the same time, with an intention to increase palatability, shelf life etc.; various dosage forms were developed in due course of time. In the present era, people only accept such elegant, palatable and easy to consume and carry formulations. First requisite in the present era is development of appropriate quality standards that fulfill increasing demands of global population. Standardization minimizes batch to batch variation; assure safety, efficacy, quality and acceptability of the polyherbal formulation.[2] unfortunately, many formulations of present day practice are devoid of Standard Manufacturing Process (SMP) and quality profiles. *Shirisha Ashwagandhadi Churna* is one such formulation that is in practice for allergic rhinitis etc. Combination of these two drugs was found to be beneficial in cases of allergic rhinitis.[3] Previous studies at IPGT&RA-Jamnagar showed beneficial effect in management of Allergic Rhinitis but, they are difficult to be consumed in the current life style, considering which; both of them were converted in to *Shirisha Ashwagandhadi Churna* by following general principles. Previously Standard Manufacturing Presses and its Pharmaceutical study was carried out by Dr Parth Dave et.al. and in this study Standard Manufacturing Process, Analytical parameters and Pharmacognosy study subjected to carry out.[4]

MATERIALS AND METHOD

Raw herbal materials [Table-1] were collected from Pharmacy, and authenticated in pharmacognosy laboratory, IPGT & RA, Gujarat Ayurved University, Jamnagar. Genuine samples of *Abhraka Bhasma* (Calcined mica) was also collected from Pharmacy, Gujarat Ayurved University, Jamnagar; while *Shringa Bhasma* (Calcined deer horn) and *Sameera Pannaga Rasa* (Arsenomercurial compound) were collected from ASFA- Pharmacy, Surat.

Preparation of the drug *Shirisha Ashwagandhadi Churna*

Completely dried *Dravya* (Raw drugs) collected and made powder in equal proportion from Pharmacy. The drugs were prepared in the Pharmacy of Gujarat Ayurveda University Jamnagar, following Standard operative procedures adopted by the Pharmacy The finished product was stored in air tight containers and kept in a dry place at room temperature.

Microscopic Study

Organoleptic and Microscopic studies of the prepared drug were done as per the guidelines of Ayurvedic pharmacopoeia of India. Little quantity of *Churna* dissolved in the distilled water and placed on slide adding with small quantity of water and observed first without stain then stained with phloro-glucinol and concentrated HCL. Microphotographs were taken under the carl zeiss trinocular microscope attached with camera.[6] The diagnostic features obtained were found to be complying with the standards mentioned at respective volumes of API.

Organoleptic Study

Shirisha Ashwagandhadi Churna (SA) was evaluated for organoleptic characters like taste, odour and color, touch.[7]

Physico-chemical analysis

Preliminary physico-chemical parameters like Moisture content, Total solid content (in 10% sol.), Ash value, Acid insoluble ash, pH value, Water soluble extract, Methanol soluble extract, Total sugar Estimation, Total fatty matter were carried out.[8]

HPTLC

Methanol extract of *Shirisha Ashwagandhadi Churna* spotted on pre coated silica gel GF 254 aluminium plates by means of CAMAG Linomate V sample applicator fitted with a 100 µL Hamilton syringe. The mobile phase consisted of Toluene, Ethyl acetate and Acetic acid in a ratio of 7:2:1 v/v. After development densitometric scan was performed with a CAMAGT. L. C. scanner III in reflectance absorbance mode at 254 and 366nm under control of Win CATS Software.[9]

RESULTS AND DISCUSSION

Preparation of Drug: *Churna* preparation was done by mixing coarse powder (sieve number 44) of raw material.

Table no. 1: Ingredients of *Shirisha Ashwagandhadi Churna*.

No.	Name of Drug	Latin/English name	Parts used
1	*Shirisha*	*Albizzia lebbec* Benth	St. Bark
2	*Vasa*	*Adhatoda vasica* Nees	Leaf
3	*Kushtha*	*Sausurrea lappa* C.B.Clarke	Root
4	*Kantakari*	*Solanum xanthocarpum* Schrad&Wendl.	Whole plant
5	*Madhuyashti*	*Glycyrrhiza glabra* Linn.	Root
6	*Pushkarmula*	*Innula racemosa* Hook.f.	Root
7	*Vibhitak*	*Terminalia chebula* Retz.	Fruit
8	*Haridra*	*Curcuma longa* Linn.	Rhizome
9	*Ajvayana*	*Tracheospermum ammi* SprageLinn	Fruit
10	*Ashwagandha Churna*	*Withania somnifera* Dunal	Root
11	*Sitopaladi churna*	i.*Sitopala* ii.*Tugakshiri* iii.*Pippali* iv.*Ela* v.*Twak*	
12	*Abhrak Bhasma*	Mica	
13	*Sameerpannag Rasa*	1.*Shuddha Parada* ii.*Shuddah Gandhak* iii.*Malla* iv.*Manahshila* v.*Hartala*	
14	*Shringa Bhasma*	Calcined Deer horn	

Organoleptic characters of *Shirisha Ashwagandhadi Churna*

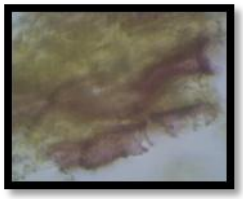
Organoleptic characters of contents of Avaleha like color, taste odour and touch were recorded separately and are mentioned. (Table-2).

Table 2: Organoleptic Characters of *Shirisha Ashwagandhadi Churna.*

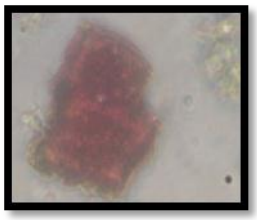
Organoleptic characters	Observation
Rasa (Taste)	Bitter, Astringent
Rupa (Colour)	Yellowish brown
Gandha (smell)	Aromatic
Consistancy	Rough, Coarse

Microscopic Study

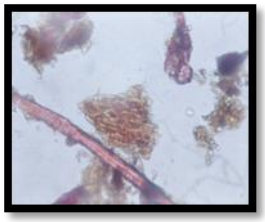
The diagnostic characters of microscopic analysis of Shirisha Ashwagandhadi Churna showed the Annular vessels of *Kusta*, Bottle neck shaped stone cells of *Pippali*, Cork cells in surface of *Twaka*, Crystal fibers of *Yashtimadhu*, Crystals of *Vansha*, Epicarp cells of *Ajwayan*, Epicarp cells of *Kantakari*, Group of starch of *Pushkaramoola*, Group of stone cells of *Ashwagandha*, Microcrystals of *Ela*, Oil globule of *Kusta*, Olioresine of *Pippali*, Palisaed cells of *Tamalpatra*, Pitted stone cells of *Pushkaramool*, Rhomboidal crystal of *Yashti*, Rosette crystal of *Bibitaki*, Sclereids with stain of *Twaka*, Simple and compound starch grains of *Ashwaganda*, Simple trichome of *Ajwayan*, Simple trichome of *Tamalpatra*, Starch grain of *Shimshipa*, Stallate trichome of *Kantakari*, Stone cells of *Shimshipa*, Striated fibres of *Ela*, Pitted stone and Simple Trichome of *Vasa* which are shown in PLATE – 1 (Figure 1–28).



Annular vessels of *Kustha*

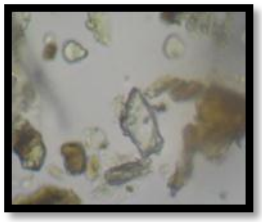


Bottle neck shaped stone cells of *Pippali*

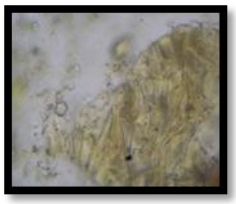


Cork cells in surface of*Twak*

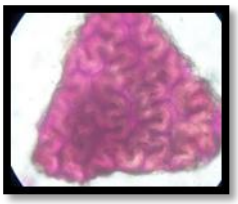
Crystal fibers of *Yashtimadhu.*



Crystal of *Vansha*



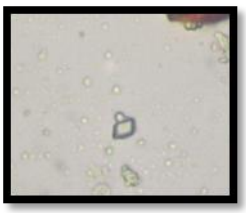
Epicarp cells of *Ajmoda*



Epicarp cells of *Kantakari*

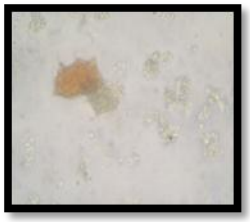
Group of starch *Pushkaramool*

Group of stone cells of *Ashwagandha*

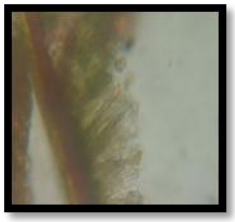


Microcrystals of *Ela*

Oil globule of *Kusta*



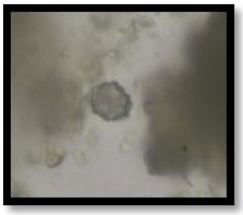
Oleoresine of *Pippali*



Oleoresine of *Pippali*

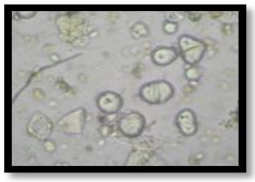
Palisade cells of *Tamal patra*

Rhomboidal crystal of *Yasthimadhu*



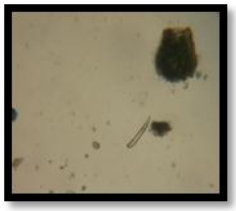
Rosette crystal of *Bibitaki*

Sclereids with stain of *Twaka*

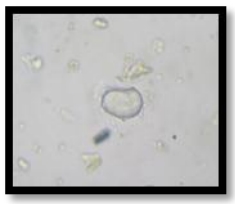


Simple and compound starch grains of *Ashwaganda*

Simple trichome of *Ajmoda*

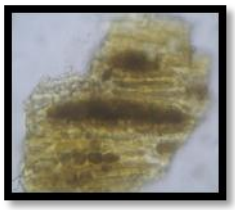


Simple trichome of *Tamal patra*



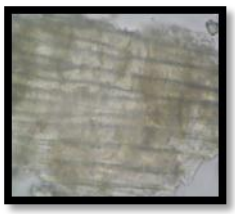
Starch grain of *Shimshipa*

Stellete trichome of *Kantakari*



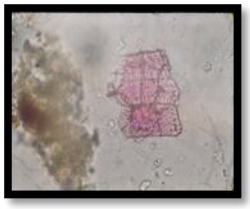
Stone cells of *Shimshipa*

Rosette crystal Stone-*Bibitaki*



Striated fibres of *Ela*

Trichome-Bibitaki



Vasa-Pitted stone

Vasa-Trichome

Plate 1: Microscopic evaluation of *Shirisha Ashwgandhadi Churna* Figure (1to 28).

Physicochemical tests

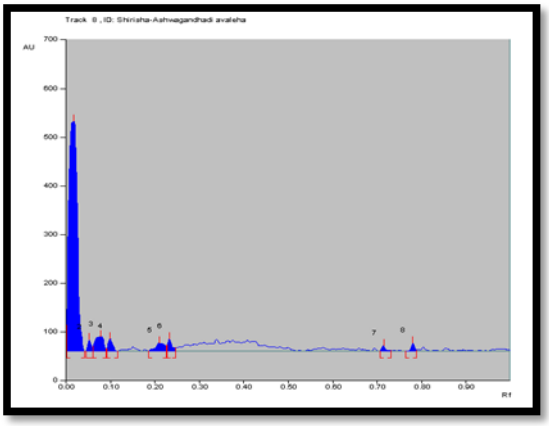
Physicochemichal parameters of *Shirisha Ashwagandhadi Churna* was assessed with standard procedures and results are shown in Table 3.

Table 3: Physico-Chemical parameters of *Shirisha Ashwagandhadi churna.*

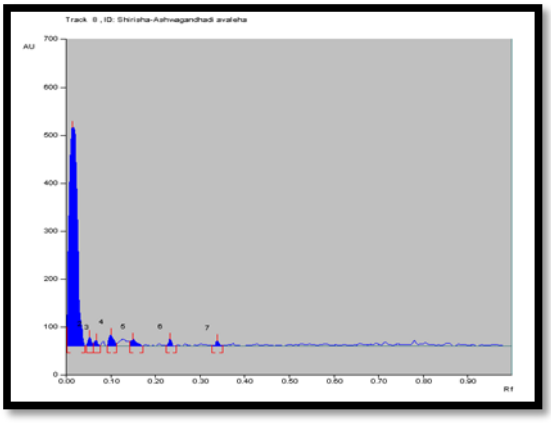
No.	Physico-Chemical Parameters	Values
1	Loss On Drying	12.37%w/w
2	Ash Value	6.66%w/w
3	Water Soluble Extract	47.73%w/w
4	Methanol Soluble Extract	53.36%w/w
5	Acid insoluble Ash	2.39%w/w
6	pH (By pH Paper)	6.5

HPTLC study results

Chromatographic study (HPTLC) was carried out under 254 and 366 nm UV to establish fingerprinting profile. It showed 07 spots at 254 nm with R_f values and 08 spots at 366 nm with R_f values recorded which may be responsible for expression of its pharmacological and clinical actions (PLATE-2, Table- 4).



1.1 : Peak display at 254 nm



1.2: Peak display at 366 nm

Plate-2: HPTLC study of *Shirisha Ashwagandhadi churna*.

Table 4: HPTLC Study of *Shirisha Ashwagandhadi churna.*

Sr. No.	Wave length	No. of Spots	R_f values
1	254nm	8	0.02, 0.05, 0.08, 0.10, 0.21, 0.23, 0.71, 0.78,
2	366nm	7	0.01, 0.05, 0.07, 0.10, 0.15, 0.23, 0.3

CONCLUSION

Study on *Shirisha Ashwagandhadi Churna* is a step towards pharmacognostical, physico-chemical standardisation of poly herbal formulation in *Churna* form. As there is no published

information available on pharmacognostical and physico-chemical profiles of this *Shirisha Ashwagandhadi Churna* preliminary information can be used for reference in future for similar research works.

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