

PHARMACOGNOSTICAL AND PHARMACEUTICAL ANALYSIS OF SHATAPUSHPADYA CHURNA

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Abstract

Ayurveda has given much importance to the Agni i.e. digestive power. Agnimandya (indigestion) is one of most common pathological condition giving rise to appearance of many symptoms like Udara gaurava (heaviness in abdomen), Alasya (laziness) etc. and also is a root cause for manifestation of many diseases. The present study deals with the standardization of Shatapushpadya Churna through the pharmacognostical and pharmaceutical standards. The presence of Bottle neck shaped stone cells, Aleurone grains of Maricha, Stratified fibres, Oil globules, Prismatic crystals of Shatapushpa, Scleroids, Stone cells of Vidanga were the characteristic features observed in the microscopy of drug combination. Pharmaceutical analysis showed that Loss on drying 2.95 % w/w, Ash value 25.58 % w/w, Acid insoluble ash 2.9 % w/w, pH 5.5. On the basis of observations and experimental results, the study may be used as standard protocol in the further quality control researches. Further studies may be carried out on Shatapushpadya Churna.

Keywords: Shatapushpadya Churna; Agnimandya; Pharmacognosy; Pharmaceutical.

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INTRODUCTION

Indigestion is a burning problem of 21st century due to changing dietary habits and Lifestyle. It is a root cause for manifestation of many diseases. Shatapushpadya churna has been stated as best one of the best medicine for Indigestion.^[1] It contains Shatapushpa (*Anethum sowa* Kurz.), Maricha (*Piper nigrum* Linn.), Vidanga (*Embelia robusta* Burm.f.), Saindhava (*Sodii chloridum*). Among them Shatapushpa, Maricha, Vidanga have Katu Rasa, Ushna Virya and Saindhava has Lavana Rasa, Ushna Virya which acts as Agnidipana. Till date there are no reference regarding the analysis of Shatapushpadya churna. Present study has been selected for Pharmacognostical and Pharmaceutical standardization of Shatapushpadya churna. Work carried out by Platel and Srinivas^[2] showed that when added to food, crushed *Piper nigrum* fruits stimulates the appetite by the secretion of digestive enzymes such as pancreatic amylase, trypsin, chymotrypsin and lipase, bile acid.^[3] *Anethum sowa* has been proved as an aid for digestion and their infusion reduces flatulence.^[4]

MATERIAS AND METHOD

Collection and authentication of raw drugs

Maricha and Vidanga fruits were obtained from Udupi (Karnataka). Shatapushpa and Saindhava were obtained from Ahmed nagar, Maharashtra. The ingredients with botanical source and parts used are mentioned in Table 1.

Pharmacognostical authentication of all the raw drugs was done based on the morphological features, organoleptic characters and powder microscopy of individual drugs.

Pharmacognostical evaluation

Pharmacognostical analysis of Shatapushpadya Churna based on Organoleptic characters i.e. color, odor, taste and texture were recorded. Individual drugs were studied under microscope. Small quantity of Shatapushpadya Churna dissolved in distilled water and filtered through filter paper and the filtrate is dried and placed on slide, first observed in plane water and then stained with phloroglucinole and Conc. HCl for lignified materials. Microscopic studies showed the lignified materials along with other cellular constituents and which was later compared with the findings of individual ingredients of final product. The microphotographs were taken by using Carl-zeiss Trinocular microscope attached with camera.^{[5][6][7][8]}

Method of Preparation of Shatapushpadya Churna

All the pre authenticated raw drugs (Table 1) 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.^[9]

Pharmaceutical

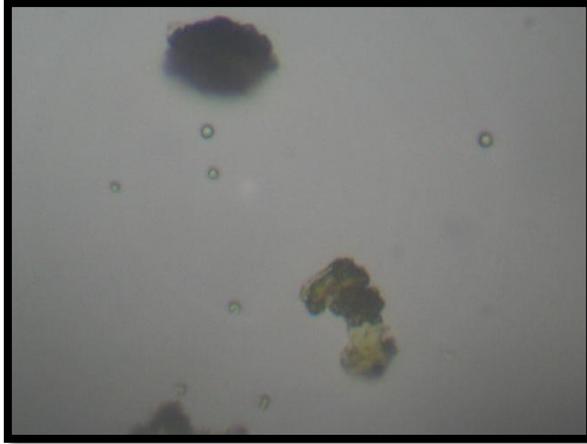
Shatapushpadya Churna was analyzed using various standard physicochemical parameters such as loss on dry, ash value, water soluble extract, Ethanol soluble extract and pH value were carried out.

OBSERVATION AND RESULTS

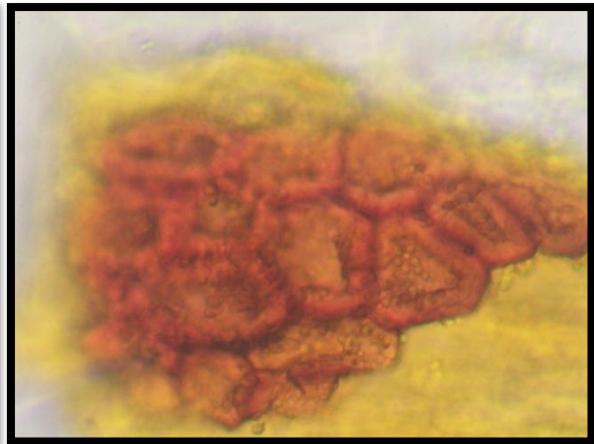
Organoleptic Characters

The sample Shatapushpadya Churna was greyish brown solid powder with Lavana (Salty) and Katu (Pungent) taste and slightly astringent smell, Course in touch.

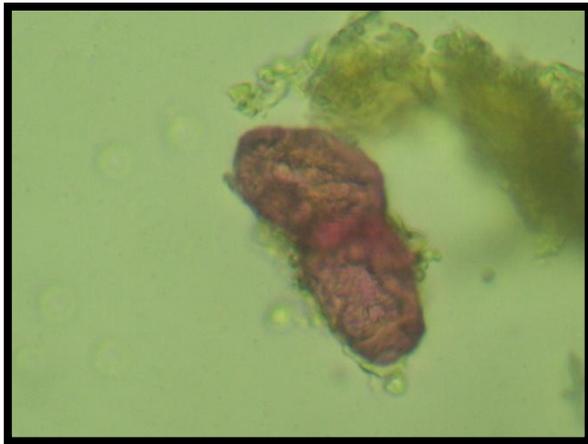
Plate 1: Microphotographs of Shatapushpadya Churna



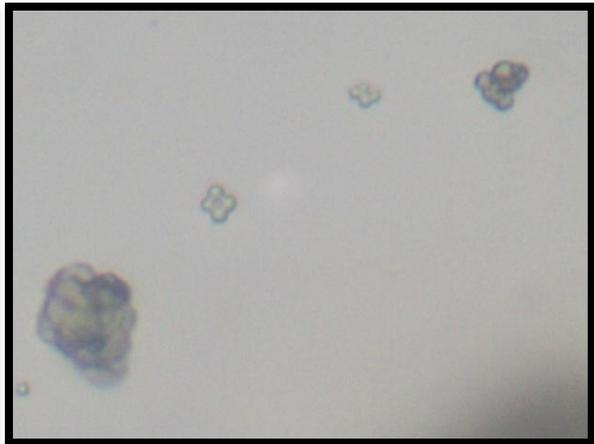
Oil Globules in Maricha



Pitted stone cells in Maricha



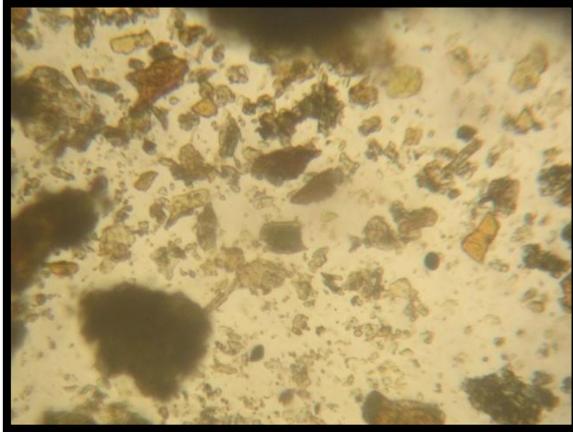
Bottle neck shaped stone cells of Maricha



Stratified fibres of Shatapushpa



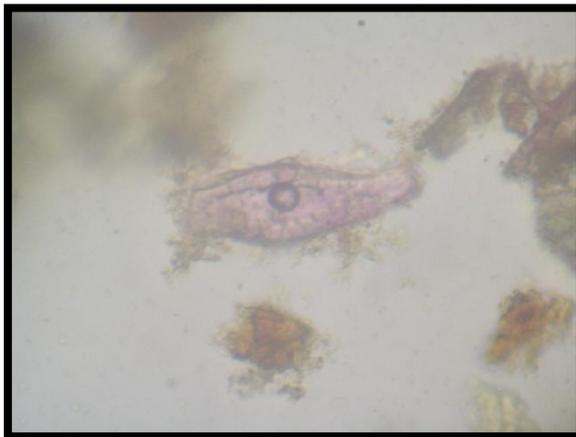
Oil globules of Shatapushpa



Starch grains of Shatapushpa



Prismatic Crystals of Shatapushpa



Scleroids in Vidanga



Stone cells of Vidanga



Annular vessels of Vidanga



Prismatic crystals of Vidanga

Table 1: Ingredients of Shatapushpadya Churna

| Sl. No. | Content | Latin name | Part used | Quantity |
|---------|-------------|--------------------------------|-----------|----------|
| 1 | Shatapushpa | <i>Anethum sowa</i> Kurz. | Fruits | 1 Part |
| 2 | Vidanga | <i>Embelia robusta</i> Burm.f. | Fruits | 1 Part |
| 3 | Maricha | <i>Piper nigrum</i> Linn. | Fruits | 1 Part |
| 4 | Saindhava | <i>Sodii chloridum</i> | - | 1 Part |

Table 2: Physicochemical parameters of Shatapushpadya Churna

| Sl. No. | Test | Result |
|---------|-------------------------|-------------|
| 1 | Loss on drying | 2.95 % w/w |
| 2 | Ash value | 25.58 % w/w |
| 3 | Acid insoluble ash | 2.9 % w/w |
| 4 | Water soluble extract | 34.49 % w/w |
| 5 | Alcohol soluble extract | 23.19 % w/w |
| 6 | pH | 5.5 |
| 7 | Particle size | |
| | >60 mesh | 41.05 |
| | 60 – 85 mesh | 57.32 |
| | 85 – 120 mesh | 1.03 |
| | <120 mesh | 0.6 |

Microscopic Characters

Powder microscopy of final product showed all the characters of individual four drugs of Shatapushpadya Churna. The diagnostic characters are Oil globules, Pitted stone cells, Bottle neck shaped stone cells, Aleurone grains of Maricha. Stratified fibres, Oil globules, Starch grains, Prismatic crystals of Shatapushpa. Scleroids, Stone cells, Annular vessels, Prismatic crystals of Vidanga. (Plate 1)

Pharmaceutical Analysis

Shatapushpadya Churna was analyzed using various standard physicochemical parameters at the Pharmaceutical chemistry laboratory. All the Pharmaceutical parameters such as loss on drying, ash value, water soluble extract, ethanol soluble extract and pH value were analyzed. (Table 2)

DISCUSSION

Study on the Shatapushpadya Churna is an effort towards pharmacognostical and physicochemical standardization of herbal drugs in powder form. Powder microscopy of Shatapushpadya Churna showed the striking characters of all individual four drugs of final product (Table 2). This confirms all the ingredients are present in the finished product, its genuinity and there is no major change in the microscopical structure of the raw drugs during the pharmaceutical processes while preparing the powder.

CONCLUSION

Pharmacognostical findings confirm that the genuinity of the compound formulation Shatapushpadya Churna and there is no major change in the microscopic structure during the pharmaceutical processes while preparing the dosage form churna. The results of this study may be used as the reference standard in further research undertakings of its kind.

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