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PHARMACOGNOSTICAL AND PHARMACEUTICAL EVALUATION OF HARITAKI KWATH

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ABSTRACT

Mutrakrichchra nearer to urinary tract infection, in which dysuria is the most common feature, is one of the prime diseases affecting mutravaha srotas (urinary system) involving the basti marma (bladder). Haritaki have been described in the treatment of mutrakriccha and its krimighna properties mentioned by Bhavaprakash. Haritaki was selected in the present study for the sensitivity of organisms found in urine culture to Haritaki kwath disc. The present study was aimed at setting up a standard profile of Haritaki kwath which was prepared using pharmacognostically authenticated raw drugs followed by subjecting it to detailed pharmacognostical and physicochemical analysis as per standard protocol. The observations were systematically recorded. Pharmacognostical findings of raw drugs confirm the authentication of Haritaki fruit bharad churna. The Total Ash% was 4.33%, Acid insoluble Ash Value was 0.870%, Loss on drying was 19.96. Spectroscopy shows absorption value at 1.43 on U.V absorption spectra 302nm. This facilitates proper soaking and boiling of the raw material.

KEYWORDS: *Haritaki Kwath*, Urinary tract infection, Mutrakricchra, Pharmacognosy, Pharmaceutics, Standardization.

INTRODUCTION

Acharya Vagbhata has classified all the urinary disorders into Mutra apravrittijanya vyadhi and Mutra atipravrittijanya vyadhis (A.S.Ni 9)[1] urinary tract infection is nearer to the term Mutrakricchra, in which dysuria is the most common feature. Most of the classical Ayurvedic texts describe eight types of Mutrakricchra. Mutrakricchra comes under Mutra apravrittijanya vyadhi, in which reduced flow of urine takes place. In this disease difficulty during micturition is the main symptom.

Escherichia, proteus, klebsiella, Enterobacter, Pseudomonas etc are common bacterias, although yeast, fungi and viruses may produce UTI[2] All this causative organism falls in category of Jantu. Many herbal drugs are mention for their anti-microbial and anti-bacterial property as krumighna.

Haritaki have been described in the treatment of mutrakriccha as well as it has krimighna properties thus Haritaki has been selected for the study. The present work was carried out to standardize and evaluate the pharmacognostical as well as to analyze the physico-chemical properties of Haritaki Kwath.

MATERIALS AND METHODS

Drug Material: *Haritaki Kwath* was manufactured by Rasashastra and bhaishajya kalpana department.

Method of Pharmacognostical evaluation

Raw drugs were identified and authenticated by the Pharmacognosy lab, Ayurved Sanshodhan Vibhag, Panchvati, Nshik. The identification was carried out based on the morphological features, organoleptic features, and transverse section microscopy of the individual drugs. For pharmacognostical evaluation, drugs studied under the Corl zeiss Trinocular microscope attached with camera, with stain and without stain.[3] The microphotographs were also taken under the microscope.

Method of Preparation of the Haritaki kwath disc (Figure 1)

- 50 gm Haritaki fruit bharad churna was taken and mixed with 800ml water in steel container, boiled on low and constant flame till 1/8th remnant of mixture.
- Cut paper disc from Whatman No.2 filter paper with the help of paper punching machine (6 mm in diameter)
- Kept the paper disc in Haritaki kwath for 10 min.
- Placed the disc in petri dish by sterilized forcep and allow drying for an hour.
- Then store the Haritaki disc in a refrigerator (4^0C) and used for sensitivity.

Method of Physico-chemical evaluation:

Haritaki kwath Disc was analyzed by using standard qualitative and quantitative parameters, at the Pharmaceutical Chemistry lab, Ayurved Sanshodhan Vibhag, Panchvati, Nshik. Presence of more moisture content in a sample may create preservation problem. Hence loss on drying[4] was also selected as one of the parameters. Ash Value and Acid insoluble Ash value selected as the parameters. Spectroscopy has been carried out using U.V absorption spectra 302nm. Organoleptical parameters, Physico-chemical analysis, investigations were carried out by following standard procedure.

RESULTS AND DISCUSSION

Pharmacognostical study

The initial purpose of the study was to confirm the authenticity of the raw drugs used in the preparation of *Haritaki kwath.* For that microscopy of the raw drugs were studied i.e. Tannin content, lignified fiber, Schelerids, parenchyma cells with starch grain, stone cells, mesocarp cells, simple petted vessels of *Haritaki*; Results matched with the API and thus confirmed the genuineness of the drugs used in the finished product. (Figure 2 to 9)

Physico- chemical Parameters

Standardization of herbal products is the need of time because of several reasons. Physico- chemical Parameters of the *Haritaki Kwath* like loss on drying, Ash velue etc. were examined and parameters were compared with API. (Table 1).

The total ash is particularly important in the evaluation of purity of drugs, i.e. the presence or absence of foreign matter such as metallic salts or silica.[5,6,7] Analytical results showed total Ash value.[8] for Haritaki kwath was 4.328%w/w and Acid insoluble Ash value was 0.8703%. Deterioration time of the plant material depends upon the amount of water present in plant material. If the water content is high, the plant can be easily deteriorated due to fungus.[9] The loss on drying.[10] at 110°C was 19.96%w/w. Spectroscopy shows absorption value at 1.43 on U.V absorption spectra 302nm. This facilitates proper soaking and boiling of the raw material.

Table 1: Chemical Analysis Of *Guda-Haritakyadi Modaka.*

Sr. No.	Parameter	Velue
1	Loss on drying	19.96%
2	Total Ash%	4.3281%
3	Acid insoluble Ash Value	0.8703%
4	U.V absorption spectra 302nm	Absorption 1.43

Figure 1: Haritaki kwath disc.

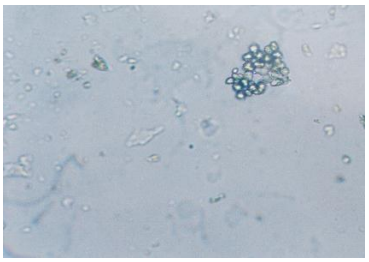

Figure 3: Starch grain.

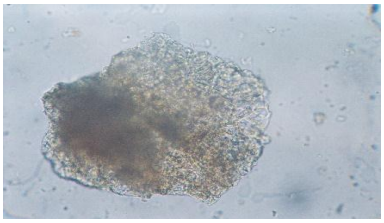

Figure 2: Mesocarp cell.

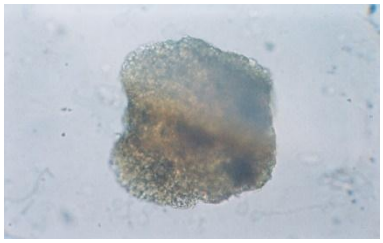

Figure 4: Tannin content.

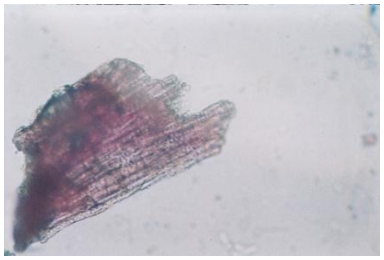

Figure 5: Simple pitted vessels.

Figure 6: lignified fiber.

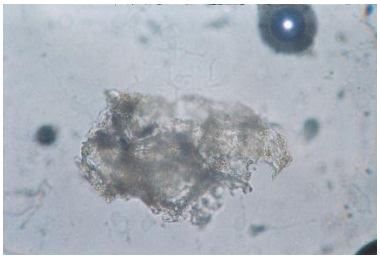

Figure 7: Parenchyma cells with starch grain.

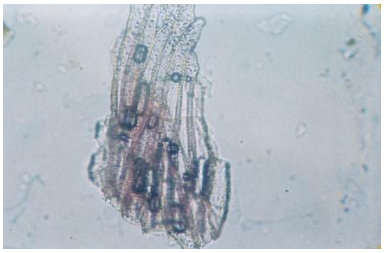

Figure 8: Scleroid.

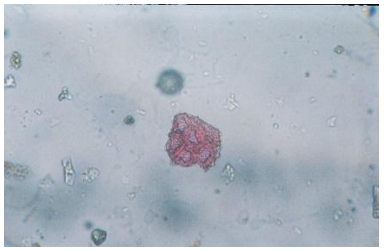

Figure 9: Stone cells.

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CONCLUSION

Haritaki Kwath is a potent significant antibacterial activity against urinary infection. Preliminary the morphological features and powder microscopy of the individual drugs results authorize the genuinity and no contaminants found. It is inferred that the formulation meets minimum qualitative standards as prescribed by API at preliminary level. Phyto-chemical analysis had assessed but still need validation through repeated experiment on different batches with quantity of ingredients. These basic stipulations for the standardization of Haritaki kwath are covered in the current study, additional important analysis and investigations are required.

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