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PHARMACOGNOSTICAL AND PHARMACEUTICAL EVALUATION OF GUDA-HARITAKYADI MODAK – AN AYURVEDIC COMPOUND

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ABSTRACT

Kaphaj kasa is a common respiratory track ailment prevalence now a days and it is annoying, irritating the individual in his routine activity. Kasa is develops as an independent disease or as upadrava of a disease. Guda-Haritakyadi Modaka (GHM), a well‑known ayurvedic preparation, was selected in the present study for the management of Kaphaj Kasa which has been mentioned by Bhavaprakash. The present study was aimed at setting up a standard profile of Guda-Haritakyadi Modaka 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 (Parenchyma & vessels, Brown content, teenin content, lignified fiber, mesocarp cells, simple petted vessels, Prismatic Crystal, Scleroids, Stone cells with stains, oiloresin, trichome, vessels, Starch grain etc.) confirm the authentication of ingredients present in the finished product. Organoleptic features of GHM made out of the crude drugs were within the standard range as mentioned in the classic. The Total Ash% was 10.840%, Acid insoluble Ash Value was 1.795%, Water soluble extract was 58.806, Alcohol soluble extract was 37.527, Loss on drying was 8.29 and foreign metter were found 0.06%. Phytochemical parameter suggest presence of Flavonoids, Tannins, Alkaloids, Steroids and Starch.

KEYWORDS: *Guda-Haritakyadi Modaka*, Kaphaj kasa, Pharmacognosy, Pharmaceutics, Standardization.

INTRODUCTION

The disease in which one suffers from excessive bought of coughing whether wet or dry called "kasa". Prevalence of this disease i.e. *kaphaj kasa* is more common in middle aged male than the females. Approximately 20% of adult males and 5% adult women are affected. *Kasa vyadi* hither to under diagnose in India is now recognized in 4%-10% of adult male population of India & several other Asian countries. The smoking associated with *Kasa Vyadhi* were high from most countries i.e. India.

Ayurveda had not only described inhaled toxins but also described impairment of digestive process as one of the constituent of pathogenesis of Kasa Vyadhi. Vata dosha and kapha dosha are the two pathological factor involved in the samprapti (Pathogenesis) of "Kaphaj Kasa".

Guda-Haritakyadi Modaka has been described by *Acharya Bhavaprakash* for *Kasa*. Majority of the ingredients of *Guda-Haritakyadi Modaka* except *Guda* are having Kashay-*Kaţu rasa*, *Virya-Ushna* and *Laghu*, *Ruksha*, *Tikşna* properties. Due to this property, As it is *Laghu* and *Tikşna*, produce *chedana* of vitiated *Kapha* and with *madhura rasa* and anuloman properties of guda it specifies *Vata* thus selected for *Kaphaj kasa*. The present work was carried out to standardize and evaluate the pharmacognostical as well as to analyze the physico-chemical properties of *Guda-Haritakyadi Modaka*.

MATERIALS AND METHODS

Drug Material: *Guda-Haritakyadi Modaka* was manufactured by Rasashastra and bhaishajya kalpana department. The ingredients and the part used are given in **(Table 1)**.

Method of Pharmacognostical evaluation

Raw drugs were identified and authenticated by the Pharmacognosy lab, Department of Botany, University of Pune. 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.[1] The microphotographs were also taken under the microscope.

Method of Preparation of the *Guda-Haritakyadi Modaka*: Fine powder of all the drugs should be in equal part than after mixed with Guda (jiggery) and modaka was prepared. Then it is to be used for oral administration according to dose.

Method of Physico-chemical evaluation

Guda-Haritakyadi Modaka was analyzed by using standard qualitative and quantitative parameters, at the Pharmaceutical Chemistry lab, Department of Botany, University of Pune. Presence of more moisture content in a sample may create preservation problem. Hence loss on drying[2] was also selected as one of the parameters. Water soluble extract,[3] Methanol soluble extract,[4] Foreign metter, Ash Value and Acid insoluble Ash value selected as the parameters. 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 *Guda-Haritakyadi Modaka*. For that microscopy of the raw drugs were studied i.e. Tannin content, lignified fiber, mesocarp cells, simple petted vessels of *Haritaki*; Brown content, Parenchyma cells with starch grains of *Sunthi;* Black debris, Brown content of *Maricha*; parenchyma with yellowish content, Group of stone cells, Fibre, of *Pippali* etc. Results matched with the API and thus confirmed the genuineness of all the drugs used in the finished product. **(Figure 1 to 16)**

Organoleptic study

Organoleptic evaluation was carried out to assess the color, odor and taste of *Guda-Haritakyadi Modaka*. Organoleptic features of *Guda-Haritakyadi Modaka* were observed like Rough in texture, Brown in colour, Aromatic in odour, Pugent in taste comparing API, brown coloured, Rough preparation with odour of Guda & trikatu; taste Pugent[5] were found**.** All parameters found as per API standards.

Physico- chemical Parameters

Standardization of herbal products is the need of time because of several reasons. Physico- chemical Parameters of the *Guda-Haritakyadi Modaka* like loss on drying, water soluble extract etc. were examined and parameters were compared with API. **(Table 2)**

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.[6][7][8] Analytical results showed total Ash value[9] for GHM was 10.840%w/w. The water soluble extractive values indicated the presence of sugar, acids and inorganic compounds.[10][11] Analytical results showed water soluble extractive.[12] value for GHM was 58.806%w/w. The alcohol soluble extractive values indicated the presence of polar constituents like phenols, alkaloids, steroids, glycosides, flavonoids.[13] The alcohol soluble extractive[14] value In GHM was 37.527%w/w, which signifies the superiority of GHM which was prepared by using traditional method of preparation. 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.[15] The loss on drying[16] at 110°C was 8.29%w/w. The Foreign metter present in GHM was 0.06% shows standard of preparation.

Phytochemical Analyses

Phytochemical parameter suggest presence of Flavonoids, Tannins, Alkaloids, Steroids and Starch.(Table 3). Also suggest Authenticated drug are used for preparation of drug.

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Author showed greeting towards guide, co-guides and Dr. S.S.Deokule sir- Prof. Department of Botany, University of Pune, for their timely suggestions, help and encouragement during the study.

CONCLUSION

Guda-Haritakyadi Modaka is a potent medicine in the management of disease *Kaphaj kasa*. Preliminary the morphological features, organoleptic 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 basis stipulations for the standardization of GHM are covered in the current study, additional important analysis and investigations are required. The results of this study may be used as the reference standard in further research undertakings of its kind.

Table 1: Ingredients Of *Guda-Haritakyadi Modaka.*

Content	Latin name / English name	Part used
Haritaki	Terminalia chebula	fruit
Shunthi	Zingiber officinale	Root
Maricha	Piper nigrum	Fruit
Pippali	Piper longum	Fruit
Guda	Jaggery	

Table 2: Chemical Analysis Of *Guda-Haritakyadi Modaka.*

Sr. No.	Parameter	Result
1	Total Ash%	10.840%
2	Acid insoluble Ash Value	1.795%
3	Water soluble extract	58.806
4	Alcohol soluble extract	37.527
5	Foreign metter	0.06%
6	Loss on drying	8.29

Table 3: Phytochemical Analysis Of *Guda-Haritakyadi Modaka.*

Sr. No.	Chemical constituent	Churna
1	Terpenoid	Absent
2	Flavonoids	Present
3	Tannins	Present
4	Glycosides	Absent
5	Alkaloids	Present
6	Resin	Absent
7	Steroids	Present
8	Starch	Present
9	Saponin	Absent

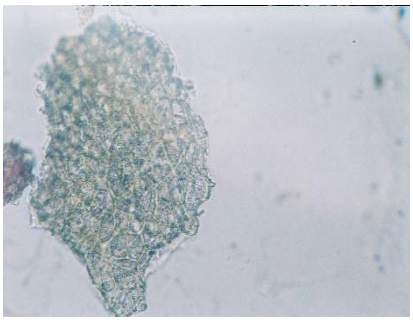

Figure 1: Mesocarp cell

Figure 2: lignified fiber

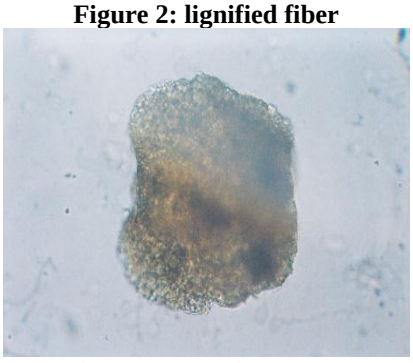

Figure 3: Tannin content

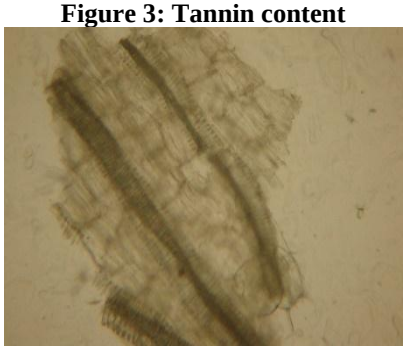

Figure 7: Parenchyma & vessels

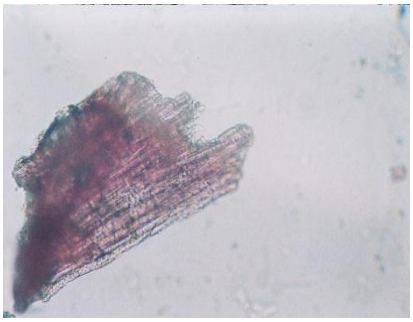

Figure 4: Simple pitted vessels

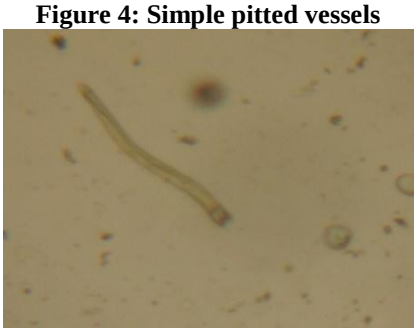

Figure 5: Trichoms

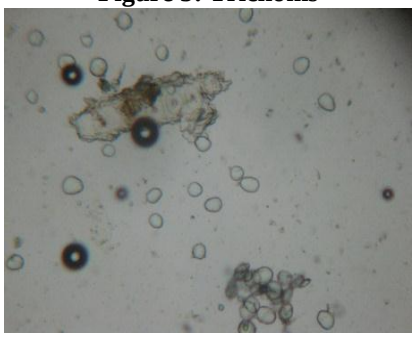

Figure 6: Starch grain

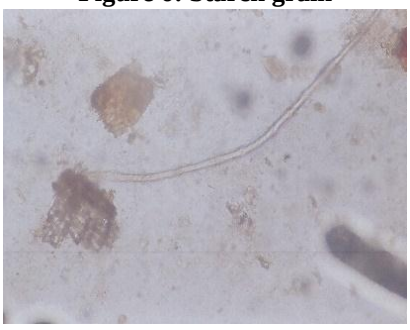

Figure 12: Fiber

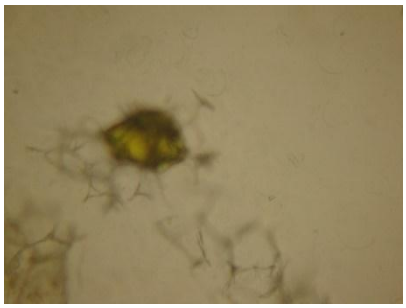

Figure 8: Oiloresin

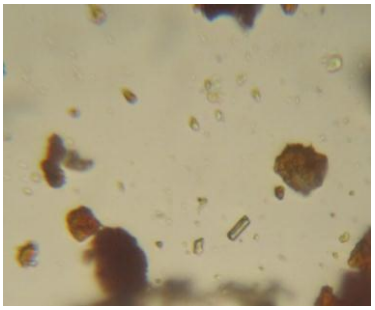

Figure 13: Prismetic cristal

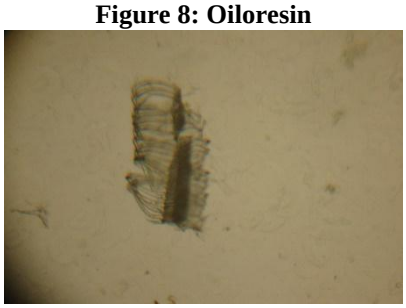

Figure 9: Vessels

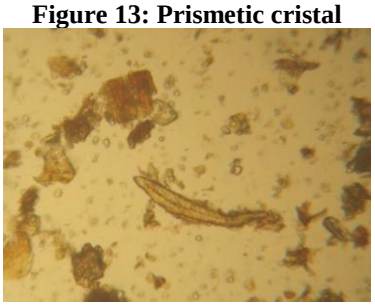

Figure 14: Scleroid

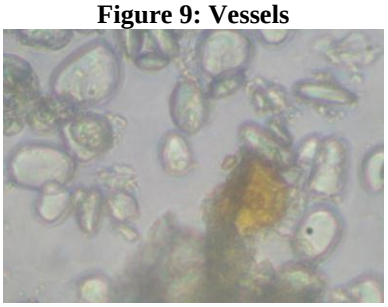

Figure 10: Brown content

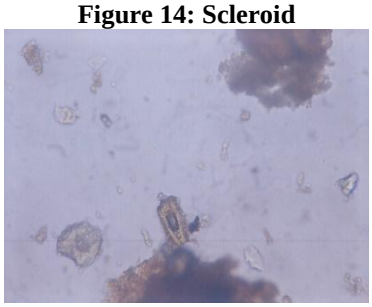

Figure 15: Perisperm cells

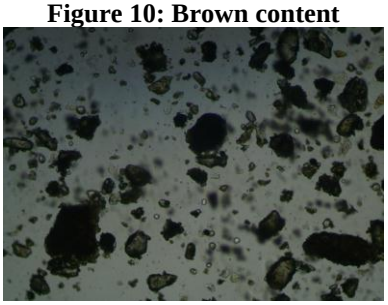

Figure 11: Black debris

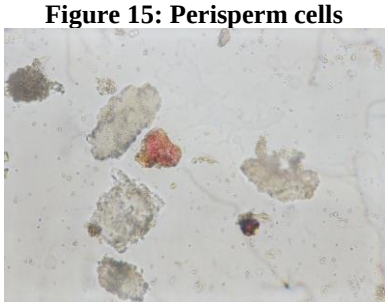

Figure 16: Stone cells with stains

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