

Pharmacognostical and phytochemical evaluation of *Haritakyadi Yoga*: A compound formulation

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Abstract

Background: In Ayurveda literature, identity of plants depends on synonyms and vernacular names. It is difficult for proper identification of all source plants and comparison of the drugs which is described in Ayurveda literature. However, with the help of botany and its divisions, it can be possible. Adulteration, quality control, and substitution are other problems of drug. One can get proper guidance for these things with the help of pharmacognosy. Ayurveda physician used *Haritakyadi Yoga* in *Agnimandya* (Anorexia) in day-to-day practice. **Objective:** The present study aimed to standardize the finished product *Haritakyadi Yoga* and to confirm its identity, quality, and purity. **Materials and Methods:** The selected samples were subjected to pharmacognosy study, physiochemical characteristics as per standard procedures. **Results:** The observation revealed that the presence of Scalariform vessels of *Shunti*, starch grains of *Shunti*, Sclereids of *Haritaki*, Stone cells of *Haritaki*, fibers of *Shunti*, Epicarp cells of *Haritaki*, cork cells of *Shunti*, oil oleoresin content of *Shunti*, and tannin content of *Haritaki*. **Conclusion:** The data evolved from this study can be adopted for laying down the standards for *Haritakyadi Yoga*.

Key words: *Agnimandya*, *Haritaki*, *Haritakyadi Yoga*, Pharmacognosy, Pharmaceutics, *Saindhava*, *Shunthi*

INTRODUCTION

Food is the factor which sustains and supports the *Dosha* (humors of body), *Dhatus* (tissue elements), and *Mala* (waste metabolic product), but it depends on *Agni* (digestive fire) for proper digestion and then only development of *Rasa*, *Raktadi Dhatu* occurs.^[1] If *Agni* becomes normal, digestion of food become proper, *Rasadi Dhatu* gets proper nutrition, and the *Sara* of the *Saptadhatu* is potent, thus the occurrence of diseases is prevented.^[2] Intake of *Ahita Aahara* is responsible for vitiation of *Agni*, which leads to *Agnimandya*. *Agnimandya* is a disease of the *Abhyantara Roga Marga* marked by inhibited activity of the *Pachakagni* resulting in delayed or partial digestion or indigestion of food taken even in small measures at proper intervals. There are various herbal and herbo-mineral formulations mentioned in Ayurveda classics for the management of dyspepsia, in which *Haritakyadi Yoga* is one of them.(Ref) It

contains *Haritaki* (*Terminalia chebula* Retz.), *Shunthi* (*Zingiber officinale* Rosc.), and *Saindhava* (Rock Salt). *Dravya* (Medicinal Drugs) is one of the factors in *Chikitsa Chatushpada* and occupies an important position next to the *Bhishaka* (Physician).^[3]

Aim

To authenticate the *Haritakyadi Yoga* as per Pharmacopeial (AFI and Ayurvedic Pharmacopeia of India [API]) method. To evaluates the quality of drug and dosage form.

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MATERIALS AND METHODS

Drug Material

The raw sample of *Haritaki*, *Sunthi*, and *Saindhava* were collected from the Pharmacy of Institute for Post Graduate Teaching and Research in Ayurveda (IPGT and RA), Gujarat Ayurveda University, Jamnagar, Gujarat, India. The ingredients and the part used are given in Table 1.

Pharmacognostical Evaluation

The drugs were identified and authenticated by the Pharmacognosy Department, IPGT, and RA, Gujarat Ayurveda University, Jamnagar, Gujarat, India. The identification was carried out based on organoleptic characters and powder microscopy of the drugs as mentioned in API. Later, powder microscopy is done with *Churna* only. *Churna* dissolved in small quantity of distilled water, filtered through filter paper, and studied under the microscope attached with camera, with stain, and without stain. The microphotographs were also taken under the microscope.^[4]

Methods of Preparation of *Haritakyadi Yoga*

All the dried ingredients were taken and converted into *Churna* then it mixed well.

Physico-chemical Evaluation

Haritakyadi Yoga was analyzed using standard qualitative and quantitative parameters; high-performance thin layer chromatography was carried out after making an appropriate solvent system with methanolic extract of *Haritakyadi yoga* at the Pharmaceutical Chemistry Lab, IPGT, and RA, Gujarat Ayurveda University, Jamnagar, Gujarat, India.^[5]

OBSERVATION AND RESULTS

Organoleptic Study

Organoleptic features of *Haritakyadi Yoga* are described in Table 2.

Microscopic Study

The diagnostic powder microscopic characters of *Haritakyadi Yoga* showed that Scalariform vessels of *Shunti*, starch grains of *Shunti*, Sclereids of *Haritaki*, Stone cells of *Haritaki*, fibers of *Shunti*, Epicarp cells of *Haritaki*, cork cells of *Shunti*, oleoresin content of *Shunti*, tannin content of *Haritaki* [Figure 1a-i].

Physico-chemical Parameters

Very simple and few analytical parameters were used, to verify

Table 1: Ingredients of *Haritakyadi Yoga*

Drugs	Botanical name	Part used	Quantity
<i>Haritaki</i>	<i>Terminalia chebula</i> Retz.	Dried fruit	1 part
<i>Shunthi</i>	<i>Zingiber officinale</i> Rosc.	Dried rhizome	1 part
<i>Saindhav</i>	Rock salt	Mineral	1 part

Table 2: Organoleptic characters of *Haritakyadi Yoga*

Organoleptic characters	Results
Color	Yellowish
Taste	<i>Amla, Lavan, Katu, Kashaya, Tikta</i>
Odor	Pungent
Touch	Fine powder

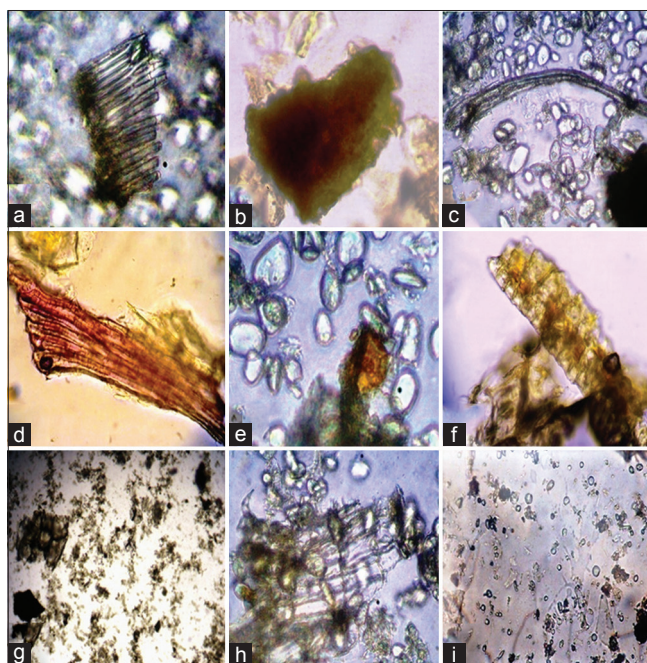


Figure 1: Microscopic characters of *Haritakyadi Yoga*. (a) Scalariform vessels of *Shunthi*. (b) Tannin contents of *Haritaki*. (c) Starch grains of *Shunthi*. (d) Sclereids of *Haritaki*. (e) Oleoresin of *Shunthi*. (f) Epicarp cells of *Haritaki*. (g) Mesocarp cells of *Haritaki*. (h) Cork cells of *Shunthi*. (i) Starch grains of *Shunthi*

the drug standardization as per CCRAS recommendations at the Pharmaceutical Chemistry Lab, IPGT, and RA; they are like a loss on drying, ash value, pH, and water-soluble extract.^[6] The details are tabulated in Table 3.

DISCUSSION

Pharmacognosy and phytochemical evaluation of *Haritakyadi Yoga* was performed which is a potent medicine in the management of *Agnimandya*. Preliminary

Table 3: Results of physico-chemical parameters of *Haritakyadi* Yoga

Test performed	Result obtained
Loss of drying at 100°C	1.78% w/w
Ash value	0.77%
pH	5.5
Water-soluble extract	38.17% w/w

organoleptic features and results of powder microscopy show the ingredients, which were used confirming the quality of *Haritakyadi* Yoga Churna. All the ingredients were proved to be authentic and compared with the parameters mentioned in API.^[7] In the physiochemical analysis, loss on drying (110°C), ash value, water-soluble extract, methanol-soluble extract, and pH (5% aqua solution) were assessed. Although the groundwork requisites for the standardization of *Haritakyadi* Yoga are covered in the current study, additional important analysis and investigations are required for the identification of all the active chemical constituents of the test drug to substantiate the clinical efficacy.

CONCLUSION

All the basic standard operating procedure requirements were carried out, and *Haritakyadi* Yoga fulfills all the requirements. Thus, the outcome of the study may be taken as standard references for the further studies.

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