



Research Article

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ANALYTICAL STUDY OF SHATAHWADI GHRITA: A POLYHERBAL AYURVEDIC FORMULATION

Rani Priyanka¹, Kalpana^{2*}, Sharma Gunjan³

¹ Assistant Professor, PG Department of Shalaky Tantra, Rishikul Campus, Uttarakhand Ayurved University Haridwar, Uttarakhand, India

² PG Scholar, PG Department of Shalaky Tantra, Rishikul Campus, Uttarakhand Ayurved University Haridwar, Uttarakhand, India

³ Professor & HOD, PG Department of Shalaky Tantra, Rishikul Campus, Uttarakhand Ayurved University Haridwar, Uttarakhand, India

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*Corresponding author

E-mail: Kalpanasatyawali25@gmail.com

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ABSTRACT

The eye is the most significant sense organ to process the world around us. As quoted in Ashtanga Hridaya, every person should sincerely attempt to maintain their vision till their last breath since, for a person who is blind, day and night are the same, and this lovely world is of no value to him even if he is wealthy. Shatahwadi ghrita is an Ayurvedic formulation mentioned in Ashtanga Hridaya in the management of timira. The content of this ghrita is Shatahva, Kushta, Nalada, Kakoli, Ksheerakoli, Yashtimadhu, Prapoundrika, Sarala, Pippali, and Devdaru. It contains drug having rasayana, balya, chakshushya and tridoshara properties. Material and Method: The prepared drug was evaluated for an organoleptic study, and physicochemical study and the product were subjected to a microbial contamination test for developing standards. Results: Shatahwadi ghrita standardisation shows remarkable results regarding the refractive index, saponification value, iodine value, peroxide value, etc.

Keywords: Shatahwadi ghrita, Analytical study, Organoleptic study.

INTRODUCTION

The term "ghr," meaning bright or to make bright, originates from the word "ghrita." Clarified buttermilk is known as ghrita in Sanskrit. Because of its excellent medicinal and nutritional qualities, Ayurvedic text has mentioned ghrita under ajasrik rasayana¹ to be used in daily routine diet. Ghrita has the unique property of pacifying the vitiated Vata and Pitta dosha².

Modern research has proved that lipid-based formulations are a more efficient carrier for drug delivery to the target organ system. Shatahwadi ghrita is a polyherbal formulation formulated according to the classical sneha kalpana method³. This ghrita mainly contains drugs having rasayana, balya, chakshushya and tridoshara properties⁴. The analytical study of this ghrita may serve as supporting literature for further studies for maintaining the standard quality of formulation.

Aim and objective

- To analyse the physical or organoleptic character of the drug.
- To find out the sterility and physicochemical tests of Shatahwadi ghrita prepared by classical method.

MATERIALS AND METHODS

Collection of Raw Materials

The raw drugs for the Shatahwadi ghrita preparation were procured from the Hans Ayurvedic pharmacy Sidcul Haridwar,

Uttarakhand. The PG Department of Dravyaguna, Rishikul Campus, Haridwar, identified the ingredients, and the voucher (DG/RC/UAU-136:02/02/2023) of the specimen sample was kept in the department.

Considering the unavailability of drugs Kakoli and Ksheerakoli, its pratinidhi dravya Ashwagandha is used as told by Acharya Bhavamishra⁶.

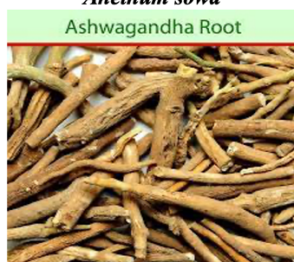
Method of preparation of Shatahwadi ghrita

The Shatahwadi ghrita was prepared in GMP approved Hans Ayurvedic Herbal Pharmacy, Sidcul, Haridwar, Uttarakhand, as per the classical ghrita paka vidhi mentioned in Sharangdhara Samhita. The first 9 drugs mentioned in Table 1. were taken in equal amounts and powdered form, then cooked in 16 times water in mandagni till its 1/4th part was remaining and then decoction was sieved. Goghrita and godugdha (8 times ghrita⁷) were added to the decoction. kalka dravya, same as kwath dravya, taken in equal amounts (1/8th part of ghrita), were added to the mixture and cooked till up to sneha siddhi lakshana were observed⁷. Heating was stopped when varti was formed and froth subsided⁸. Ghrita was filtered while still hot through a muslin cloth and cooled. After that, the ghrita was packed tightly in glass containers to protect it from light and moisture.

Shatahwadi ghrita was evaluated for pharmacognostic, physicochemical and microbiological limits for developing standards⁹.

Table 1: Ingredients and Compositions of Shatahwadi Ghrita⁵

Name			Family	Part Used	Composition
Sanskrit	English	Botanical			
Shatahva	Dill	<i>Anethum sowa</i>	Umbelliferae	Seed	200 gm.
Kushta	Costus	<i>Saussurea lappa</i>	Asteraceae	Root	200 gm.
Nalada	Spikenard	<i>Nardostachys jatamansi</i>	Caprifoliaceae	Rhizome	200 gm.
Kakoli		<i>Roscoeia purpurea</i>	Zingiberaceae	Rhizome	200 gm.
Ksheerkakoli	Himalayan Lilly	<i>Lilium polyphyllum</i>	Liliaceae	Rhizome	200 gm.
Yashtimadhu	Liquorice	<i>Glycyrrhiza glabra</i>	Fabaceae	Root	200 gm.
Prapoundrika	Sacred lotus	<i>Nelumbo nucifera</i>	Nelumbonaceae	Flowers	200 gm.
Sarala	Long leave pine	<i>Pinus roxburghii</i>	Pinaceae	Wood	200 gm.
Pippali	Long pepper	<i>Piper longum</i>	Piperaceae	Fruit	200 gm.
Devdaru	Himalayan cedar	<i>Cedrus deodara</i>	Pinaceae	Wood	200 gm.
Goghrita		<i>Butyrum departum</i>		-	5 kg
Godugdha				-	40 litres

*Anethum sowa**Saussurea lappa**Nardostachys jatamansi**Withania somnifera**Piper longum**Nelumbo nucifera**Glycyrrhiza glabra**Cedrus deodara*

RESULT AND DISCUSSION

Pharmacognostic analysis: Shatahwadi ghrita is an unctuous, viscous soft mass of yellowish brown coloured low melting ghrita with a pleasant odour and bitter taste shown in Table 2.

Physicochemical analysis: The organoleptic characteristics observed are shown in Table 2. The results for tests of refractive index, acid value, saponification value, iodine value, and peroxide value are depicted in Table 3. Refractive index and specific gravity are distinctive parameters of oleaginous substances. The degree of unsaturation of oil, fat or wax is measured by iodine value. Peroxide value is a deteriorative change depending on the level of unsaturation, packaging material and storage condition. It increases on storing ghee at room temperature and on increasing temperature. Depending on the fatty acid, the saponification value is expressed by potassium hydroxide in mg required to saponify one gram of fat. This parameter indicates free acidic groups available in the fatty matter. The acid value measures the content of free fatty acids in

the vegetable oil and describes the quantity of caustic potash solution, which is necessary to neutralise the free fatty acids. The assay of heavy metals inferred within prescribed limits is shown in Table 4. The microbial study is conducted in Table 5, showing the absence of microbial contamination.

Analytical study: Prepared Shatahwadi ghrita were analysed employing parameters as mentioned below.

Organoleptic study: Contents of Shatahwadi ghrita was evaluated for organoleptic characteristics like taste, odour and colour etc. (Table 2)

Physicochemical analysis: Acid value, peroxide value, saponification value, iodine value, and refractive index tests were carried out. (Table 3)

Microbiological limit test: Microbial load estimation shows the total bacterial count, yeast, and mould count. Test for another specific pathogen is negatively defined in Table 5.

Table 2: Organoleptic properties and physical parameters of Shatahwadi ghrita

Test parameters	Results
Appearance	Yellowish brown coloured oily liquid
Colour	Yellowish brown
Odour	The prominent odour of goghrita
Taste	Kashaya, tikta (Bitter)
Touch	Smooth
Texture	Soft

Table 3: Physicochemical parameters of Shatahwadi ghrita

Test parameters	Results
Refractive index at 25 °C	1.457
Weight/ml(g) at 25 °C	0.899
Acid value	1.67
Peroxide value	1.79
Saponification value	234.44
Iodine value	36.88

Table 4: Heavy metals in Shatahwadi ghrita

Heavy Metal	Results
Lead ppm	3.12
Arsenic ppm	<0.50
Cadmium ppm	0.09
Mercury ppm	<0.13

Table 5: Microbial load estimation of the formulated Shatahwadi ghrita

Total bacterial count (cfu/g)	220
Total fungal count(cfu/g)	<10
<i>Escherichia coli</i>	Absent
<i>Staphylococcus aureus</i>	Absent
<i>Pseudomonas aeruginosa</i>	Absent
Salmonella species	Absent

CONCLUSION

The characteristics of the Shatahwadi ghrita were depicted by pharmacognostic findings. The physicochemical analysis of the ghrita implied that the formulation complies with the normal prescribed limits described in the Ayurvedic Pharmacopoeia of India. Based on observation and analysis, the current study may be used as a reference standard in future quality control studies.

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