

Preparation and Standardization of Brahmi Ghrita: A Herbal Ghee Based Medicinal Preparation

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ABSTRACT

Aim: To prepare and standardize Brahmi Ghrita.

Materials and Methods: Ingredients like Brahmi, Shatavari, Elettaria Cardiamom, Water and Ghee were used for preparation. Physico-chemical properties like organoleptic characters, Acid value, Saponification Value, Specific Gravity, Melting Point, pH were carried out as per the WHO guidelines and Indian Pharmacopoeia and Ayurvedic Pharmacopoeia.

Conclusion: The prepared formulation has been standardized in authenticating and ensuring the quality. It concludes that Ghrita is natural and unique product which is most beneficial to all. This Ghrita play a very important role in the treatment of various Stress related diseases.

KEYWORDS: Ghrita, Standardization, Stress, Anti-Anxiety Drug.

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I. INTRODUCTION

Ghrita means something in Buddhism, Pali, Hinduism, Sanskrit, Jainism, Prakrit, Marathi, Hindi. Ghrita was first time mentioned in charak samhita having ingredients like Brahmi (*Bacopa monneria*), Vacha (*Acorus Calamus*), Shakhapushpi (*Evolvulus alsinoids*). Kushtha (*Saussurea lappa*) and cow's ghee and indicated for treatment of unwanted, Apasmar and Graha disorders. In due courses of time, this formulation was modified by various Acharya as pre-requirement of patients, nature of disease, Desh, Kala etc. Recently Government of India which has same indications and ingredients along with method of preparation as mentioned in Astang Hriday. Ghrita is nothing but Ayurvedic medicine, in herbal cow ghee form. This have the ayurvedic base in the form of oil as base. It is prepared by various methods by adding various herbs with water. Ghrita/sedated ghee an ayurvedic restorative arrangement. Ghrita or ghee is a sort of fat (snehadravya) subsequently the fat-soluble dynamic guideline of the fixings is appropriately disintegrated in ghee and guarantees their assimilation in body. Additionally, just ghee is the medium, which cross the blood mind obstruction, the drugs showed for mind sensory system issue, which handled in ghee and utilized, acts best which no other measurement's structure can¹.

1. Brahmi:

- Biological Source: Leaves of *Centella asiatica (L)*.
- Family: Apiaceae.
- Synonyms: Bramhi, jala-Bramhi, Manduki.
- Uses: Brahmi is used for improving memory, anxiety, Attention Deficit Hyperactivity Disorder (ADHD), allergic conditions and as a general to fight stress.
- Medicinal value: Antidepressants, Anti stress activity, Anti inflammatory.

2. Shatavari:

- Biological Source: Root of *Asparagus racemosus Willd.*
- Family: Liliaceae.
- Synonyms: Asparagus.
- Uses: Antispasmodic, Aphrodisiac, Demulcent, Diuretic, Galactagogue, Refrigerant.
- Medicinal value: Good for the respiratory tract. Reduces mood swings. Relieves stress and

Anxiety, Gastric problems can be cured.

3. **Elettaria Cardamomum:**

- Biological Source - Dried ripe fruits of *Elettaria Cardamomum*.
- Family: Zingiberaceae.
- Synonyms: - Small cardamom, Elachi.
- Uses: Applications including for the control of asthma.
- Medicinal value: Anxiolytic activity, Analgesic activity, Sedative activity and Anti- inflammatory activity.

To ensure the availability of a consistent product and to ensure a dependable product with identifiable ingredients, standardization is required. The standardization of herbal medicines is always challenging as it medicines include many active principles; therefore the molecule that is actually active is typically unknown. To evaluate quality, consistency of active principles, and therapeutic efficacy of medications, standardization of herbal formulations is crucial. To support their acceptance and safety, herbal compositions must first undergo a quality assessment².

II. MATERIALS AND METHODS

Plant Material: The constituents of Brahmi Ghrita were collected from the local market of Pune District, India in the month of November 2022. The collected drug was identified and authenticated at the teaching faculty of Department of Dravyaguna (Ayurveda Pharmacology), Z.V.M. *Unani Medical College* and Hospital, Pune, India.

Methodology: Physico-chemical properties like organoleptic characters, Acid value, Saponification Value, Specific Gravity, Melting Point, pH were carried out as per the WHO guidelines, Indian Pharmacopoeia and Ayurvedic Pharmacopoeia.

1. **Determination of Acid value:** Weighed 10g of sample in a conical flask. Added 50 ml of acid free alcohol-ether mixture (25 + 25ml) previously neutralised by the addition of 1 ml of Phenolphthalein solution and titrated against 0.1N potassium hydroxide solution. End point was the appearance of pale pink colour which persists for 15sec. repeated the experiment twice to get concordant values. Formula of acid value: $\text{Acid value} = 56.1 \times \text{titret} \times \text{strength of KOH} \div \text{weight of oil}$.

2. **Determination of Saponification value:** About 2g of the substance was weighed in tared 250 ml round bottom flask. 25ml of the alcoholic solution of KOH was added and a reflux condenser was attached. Kept it for boiling on water bath for 1hr, the contents of the flask was rotated frequently. The flask was cooled and 1ml phenolphthalein solution was added and excess of alkali titrated with 0.5N HCl. The number of ml (a) required was noted. The experiment was repeated with the same quantities of reagents in the same manner omitting the substance. The number of ml required (b) was noted. The experiment was repeated twice to get concordant values. Formula for saponification value: $\text{Saponification value} = 28.05 \times (b - a) \div w$.

3. **Specific gravity:** Cleaned a specific gravity bottle by shaking with acetone and then with ether. Dried the bottle and noted the weight. Cooled the sample solution to room Temperature. Carefully filled the specific gravity bottle with the test liquid, inserted the stopper and removed the surplus liquid. Noted the weight. Repeated the procedure using distilled water in place of sample solution. Formula for specific gravity: $\text{Specific gravity} = \text{weight of liquid under test} \div \text{weight of water}$.

4. **pH:** The hydrogen ion concentration, or pH, is an indicator of a solution's acidity or alkalinity. The pH scale has numbers 0 through 14. Acidic substances have a pH under seven, while basic or alkaline substances have a pH over seven³.

III. RESULT AND DISCUSSION

1. **Preparation of Gharita:** Soft paste of fresh plant brahmi (40gm) and fine powder of Elettaria cardiamom (20gm) and Shatavari (40gm) were mixed together and form homogeneous mass in beaker. Ghrita (400gm) was heated on low flame till fumes arise and then it was allowed to cool. Homogeneous mass of Brahmi plant and elettaria cardiamom and shatavari powder (100gm) and water (1600ml) are added in Ghrita and mixed appropriately. That mixture was heated on low flame till total water content gets evaporated. The mixture was heated on low flame till total water content gets evaporated extraction of bio-components of herbal drugs in lipid base was attained. The prepared formulation was filtered and stored in airtight containers.



Fig 1: Prepared Ghrita

2. **Evaluation parameters:** The standardization parameters of Bramhi Ghrita were detailed in Table 1 and 2.

Table1: Organoleptic Parameter of Brahmi Ghrita

Parameter	Result
Color	Greenish yellow
Odour	Sweet fragrance
Taste	Bitter
Touch	Oily
Appearance	Clear oil

Table2: Standardization Parameters for Brahmi Gharita

Sr.No	Parameter	Result	Standard
1	Acid value	2.1	0.1 to 10
2	Saponification value	126.2	Not more than 225
3	Specific gravity	1.02569	1.01995
4	pH	2.9	1-4

IV. CONCLUSION

Various scientific quality criteria have been used to standardize Brahmi Ghrita. The results can be utilized as a guide when creating Brahmi ghrita's pharmacopoeial standards so that there are no unneeded problems for the end user.

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CONFLICT OF INTEREST

The authors are declaring no conflict of interest.

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