

**THE ROLE OF MADHU AND GUDA FOR PREPARATION OF  
ASHVAGANDHADYARISHTA: A ANALYTICAL STUDY**

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**ABSTRACT**

**Aim:** The role of *madhu* and *guda* for preparation of *Ashvagandhadyarishta*: a analytical study.

**Methods:** This analytical study was done in the department of ayurveda department. The method of preparation *ashvagandhadyarishta* followed was Ayurvedic Formulary of India. Study includes two batches of *ashvagandhadyarishta* preparation. Batch 1 has *ashvagandhadyarishta* with *madhu* as *madhura dravya* and batch 2 has *ashvagandhadyarishta* with *guda* as *madhura dravya*. Ingredients were procured from local market of Punjab. Ingredients and their quantity were taken same for both the batches of *ashvagandhadyarishta*. Also *prakshepaka dravya* and its quantity were taken same for both the batches but instead of *madhu*, *guda* was taken in batch 2 for the preparation.

**Results:** Analytical study of both the batches was done and their parameters were compared and analyzed including organoleptic features.

**Conclusion:** Change in the analytical and organoleptic characters were observed owing to the changes in the sweetening agents. Further research works has to be carried out to understand the clinical efficacy.

**Keywords :** *madhu* , *guda* , *Ashvagandhadyarishta*

**Introduction**

Jaggery is an unrefined sugar obtained by processing of sugarcane (*Saccharum officinarum* L.) and regarded as 'whole sweetener' because of its nutritional value. Many organic and inorganic compounds present in sugarcane juice are retained along with sucrose and hence more nutritive than that of refined sugar.<sup>1</sup> Jaggery is used as a media for the preparation of different Ayurvedic formulations such as Asava, Arishtas, Lehya, Gula etc. It is also used as an important vehicle during administration of drugs. It contains up to 50% sucrose, upto 20% invert sugars with some other insoluble matter such as ash, proteins and bagasse fibers.<sup>2</sup> It is directly consumed by humans and used in animal feed mixtures. Jaggery is a natural sweetener made by the concentration of sugarcane juice prepared without the use of any chemicals.<sup>3</sup> *Asava* and *arishta* are medicinal preparations made by soaking the drugs either in powder form or in the form of *kashaya* (decoction) in a solution of sugar or jaggery for a specified period of time, during which it undergoes a process of fermentation generating alcohol thus facilitating the extraction of the active principles contained in the drugs.<sup>4</sup> *Ashvagandhadyarishta* is a hydro-alcoholic preparation mentioned in Ayurveda Pharmaceutics. It is a type of *arishta* preparation which is a *rasayana* (rejuvenating) possess greater shelf- life compared to *panchavidha kashaya kalpana* where *madhu* (honey) is mentioned as *madhura dravya* (sweetening agent) in the formulation; indicated in *murcha* (syncope), *apasmara* (epilepsy), *shosha* (cachexia), *unmada* (psychosis), *karshya* (emaciation), *arshas* (piles), *agnimandya* (digestive impairment), *vataroga* (disease due to *vata dosha*) with the dose of 12 to 24ml.<sup>5</sup> Usually *guda* (jaggery) is mentioned as *madhura dravya* in most of the *arishta* preparations but in *ashvagandhadyarishta*, *madhu* is mentioned where both act as self preservative. So in this study an attempt is made to prepare *ashvagandhadyarishta* in two batches by adding *madhu* as *madhura dravya* in one batch and *guda* as *madhura dravya* in another batch and to compare their organoleptic and analytical parameters.

**Materials and Methods**

This analytical study was done in the department of ayurveda department. The method of preparation *ashvagandhadyarishta* followed was Ayurvedic Formulary of India.<sup>6</sup> Study includes two batches of *ashvagandhadyarishta* preparation. Batch 1 has *ashvagandhadyarishta* with *madhu* as *madhura dravya* and batch 2 has *ashvagandhadyarishta* with *guda* as *madhura dravya*. Ingredients were

procured from local market of Punjab. Ingredients and their quantity were taken same for both the batches of *ashvagandhadyarishta*. Also *prakshepaka dravya* and its quantity were taken same for both the batches but instead of *madhu*, *guda* was taken in batch 2 for the preparation.

### Methodology

The drugs were coarsely powdered and prescribed amount of water was added and heated over moderate flame to prepare *kashaya*. After it was reduced to 1/4th part, the *kashaya* was filtered and strained through a cloth. To batch 1, *madhu* was added after the *kashaya* cooled down along with the *prakshepaka dravya* and *dhataki pushpa*. To batch 2, *guda* was added when the *kashaya* was hot itself for easy dissolution, filtered and then transferred to fermentation vessel and kept in fermentation vessel and *prakshepaka dravya* and *dhataki pushpa* was added. The mouth of the vessel was covered with a lid and then it was examined for commencement of fermentation. The container was kept in a heap of paddy to maintain the constant temperature with the edges sealed. After a period of 20 days, the lid was removed and examined for the completion of fermentation that showed features viz., sunken *prakshepaka dravya*, cessation of effervescence and hissing sound and presence of strong alcoholic odor. Finally it was filtered and stored in a clean closed container.<sup>7</sup>

**Table 1: Ingredients of Ashvagandhadyarishta**

Drugs	Part used	Quantity
<i>Ashvagandha (Withania somnifera Dunal)</i>	Root	250g
<i>Musali (Asparagus adseendens Roxb)</i>	Root	100g
<i>Manjishta (Rubia cordifolia Linn)</i>	Root	50g
<i>Haritaki (Terminalia chebula Retz)</i>	Fruit pulp	50g
<i>Haridra (Curcuma longa Linn)</i>	Rhizome	50g
<i>Daruharidra (Berberis aristata Dc)</i>	Stem	50g
<i>Madhuka (Glycyrrhiza glabra Linn)</i>	Root	50g
<i>Rasna (Alpinia officinarum Hance)</i>	Root	50g
<i>Vidari (Pureria tuberosa Dc)</i>	Root	50g
<i>Arjuna (Terminalia arjuna W&amp; A)</i>	Stem bark	50g
<i>Musta (Cyperus rotundus Linn)</i>	Rhizome	50g
<i>Trivrt (Operculina turpethum L)</i>	Root	50g
<i>Swetha sariva (Hemedismus indicus R.Br)</i>	Root	40g
<i>Krishna sariva (Ichnocarpus frutescens R.Br)</i>	Root	40g
<i>Sweta chandana (Santalum album Linn)</i>	Heartwood	40g
<i>Rakta chandana (Pterocarpus santalinus Linn)</i>	Heartwood	40g

<i>Vacha (Acorus calamus Linn)</i>	Rhizome	40g
<i>Chitraka (Plumbago zeylanica Linn)</i>	Root	40g
Water taken		9.8101
Reduced to		1.2101

**table 2: Prakshepaka dravya of Ashvagandhadyarishta batch 1 and batch 2**

Drugs	Part used	Quantity
<i>Madhu</i>		1450g
<i>Dhataki (Woodfordia fruticosa Salisb)</i>	Flower	70g
<i>Shunti (Zingiber officinale)</i>	Rhizome	10g
<i>Maricha (Piper nigrum Linn)</i>	Fruit	10g
<i>Pippali (Piper longum Linn)</i>	Fruit	10g
<i>Twak (Cinnamomum zeylanica Blume)</i>	Stem bark	20g
<i>Ela (Elettaria cardamomum Maton)</i>	Seed	20g
<i>Patra (Cinnamomum tamala)</i>	Leaf	20g
<i>Priyangu (Callicarpa macrophylla Vahl)</i>	Flower	20g
<i>Nagakesara (Mesua ferrea Linn)</i>	Flower	10g

## Results

Analytical study of both the batches was done by following procedures given in CCRAS protocol.<sup>8</sup> Organoleptic and analytical parameters of both the batches were analyzed.

**Table 3: Organoleptic parameters of both batches of Ashvagandhadyarishta**

Parameters	Batch 1	Batch 2
Appearance	Liquid consistency	Thicker consistency
Color	Brownish	Brownish
Odor	Mild alcoholic odor	Strong alcoholic and guda odor
Taste	<i>Kashaya pradhana katu</i> (pungent)	<i>Madhu</i> (sweet) <i>pradhaatikta</i> (bitter)

**Table 4: Analytical parameters of both batches of Ashvagandhadyarishta**

Parameters	Batch 1	Batch 2
pH	3.51	4.49
Specific gravity (kg/m <sup>3</sup> )	1.1402	1.2352

Total Suspended Solids (TSS %)	36	>35
Refractive index	1.488	1.545
Viscosity (Pa.s)	0.0471	0.1602
Alcohol (%)	9	11

### Discussion

*Ashvagandhadyarishta* is a known formulation indicated for *murcha*, *apasmara*, *shosha*, *unmada*, *karshya*, *arshas*, *agnimandya*, *vataroga*. Even though the method followed was same for both the batches, it differs in the properties of final product as the sweetening agents used were different. *Madhu* and *guda* are *madhura* (sweet) *rasa pradhana* but differs in their *gunadikarma*. Batch 1 is *kashaya* (astringent) *pradhana katu* (pungent) due to the *katu* (pungent) *vipaka* of *madhu* where batch 2 is *madhura* predominant in taste because of *madhura vipaka* of *guda*.<sup>9</sup> Batch 2 is thicker in consistency due to *snigdha* (unctuous) *guna* of *guda*.<sup>10</sup>

Batch 1 is more acidic due to *madhu* as it has pH of 4 while jaggery has pH of 6. Specific gravity, viscosity and total suspended solids are more for batch 2 containing *guda* due to the presence of more components in jaggery.<sup>11</sup> Also the particle size present in jaggery has significantly affected on the chemical properties of it.<sup>12</sup> Alcoholic percentage is also more in batch 2 as it is rich in sugar percentage; that has undergone more fermentation leading to the release of more alcoholic production.<sup>13</sup>

### Reference

1. Kumar A , Tiwari G.N.,“Effect of shape and size on convective mass transfer coefficient during greenhouse drying (GHD) of jaggery”. Journal of Food Engineering.2006; 73: 121-134.
2. Ghosh A.K. , and Agrawal M.P., “ Gur grading based on physical and chemical constituent”s. Maharashtra Sugar.1983; 8 (12): 39 – 43.
3. Singh K.,“Need for research and development in jaggery, Khandsari and brown sugar in India”. National Seminar cum group discussion on jaggery manufacture and storage, IISR, Lucknow:1985;1-9.
4. Government of India Ministry of Health & Family Welfare. The Ayurvedic Formulary of India. 2nd ed: part 1. The Controller of Publications Civil Lines: New Delhi; 2003: 3.
5. Ambikadatta Shastry Kaviraj. Bhaishajya Ratnavali. Murcharoga Chikitsa Prakaranam, verse 15-21. Chawkhamba Publications: Varanasi; 2001: 356.
6. Government of India Ministry of Health & Family Welfare. The Ayurvedic Formulary of India. 2nd ed: part 1. The Controller of Publications Civil Lines: New Delhi; 2003: 9
7. Ambikadatta Shastry Kaviraj. Bhaishajya Ratnavali. Murcharoga Chikitsa Prakaranam, verse 15-21. Chawkhamba Publications: Varanasi; 2001: 355.
8. CCRAS, Laboratory Guide for the Analysis of Ayurveda and Siddha Formulations. 1st ed: CCRAS Department of AYUSH, Ministry of Health and Family Welfare; New Delhi: 2009.
9. Rajesh CK, Shajahan MA, Shahul Hameed A. Ayurvedic Review On Guda (Jaggery). Ayurpharm International Journal of Ayurveda and Allied Sciences. 2016; 5(5): 69.<http://www.ayurpharm.com/index.php/archives/category/60-volume-5-issue5?download=174:review-article-ayurvedic-review-on-gudajaggery-rajesh-ck-shajahan-mashahul-hameed-a>.
10. Rajesh CK, Shajahan MA, Shahul Hameed A. Ayurvedic Review On Guda (Jaggery). Ayurpharm International Journal of Ayurveda and Allied Sciences. 2016; 5(5): 71. <http://www.ayurpharm.com/index.php/archives/category/60-volume-5>

issue5?download=174:review-article-ayurvedicreview-on-guda-jaggery-rajesh-ck-shajahanmashahul-hameed-a

11. Nath A, Dutta D, Kumar Pawan, Singh JP. Review on recent advances in value addition of Jaggery based products. Food processing and technology. 2015; 6: 2-4. <https://www.longdom.org/open-access/review-on-recent-advances-in-value-addition-of-jaggerybasedproducts-2157-7110-1000440.pdf>
12. Unde P.A., Adagale P.V., Imran Hashmi Syed, Raheem Abdul. Effect of different particle sizes of Jaggery powder on storability. World Journal of Agricultural Sciences. 2011; 7(2): 157-160. <https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.415.479&rep=rep1&type=pdf>
13. Malakar Santanu, et al. Biotechnological interventions in beverage production. Science Direct. 2020; 19: 1-37.