

Formulation of Chyawanprash and Comparative Evaluation with Marketed Chyawanprash

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ARTICLE INFO

ABSTRACT

Article History:

Accepted: 05 Feb 2024

Published: 28 Feb 2024

Publication Issue :

Volume 11, Issue 1

January-February-2024

Page Number :

577-584

A traditional Ayurvedic compound known for its many health advantages is chyawanprash. For generations, Indian traditional medicine has utilised this intricate herbal jam to enhance general well-being and lifespan. The purpose of this study article is to investigate the formulation and assess the Chyawanprash quality factors. In addition to a mixture of herbs, spices, and honey, the formulation process entails the careful selection and processing of several botanical constituents, including amla (*Emblica officinalis*). Conventional techniques are employed to blend these components into a strong and agreeable concoction. Chyawanprash is evaluated by determining its physicochemical parameters, such as pH, viscosity, moisture content, and ash value, in addition to its organoleptic characteristics. Bioactivity testing can also clarify Chyawanprash's immunomodulatory, antioxidant, and other medicinal qualities. These assessments offer insightful information about the safety and effectiveness of this Ayurvedic medicine. It is essential to comprehend the composition and assess the quality standards of Chyawanprash in order to guarantee both its efficacy and safety. This study bridges the gap between conventional wisdom and contemporary medical science by adding to the continuing scientific investigation of herbal treatments.

Keywords : Chyawanprash, Amla, Ayurvedic Formulation, Immunity

I. INTRODUCTION

An appreciated combination of botanicals, minerals, and other natural substances that have been methodically formulated to support holistic health

and strength is known as chyawanprash in the Ayurvedic community. With roots in ancient Indian customs, Chyawanprash has been used for generations and is highly valued for its restorative and revitalising qualities. This classic Ayurvedic jam is well known for

its many health benefits in addition to its mouthwatering flavour. Amla (*Emblica officinalis*) is the main ingredient of Chyawanprash, which is made by carefully combining herbs, spices, fruits, and other natural ingredients. A vital component of Ayurvedic medicine, amla, commonly referred to as Indian gooseberry, is renowned for its strong antioxidant and abundant vitamin C stores. In addition to Amla, a variety of herbs like Shatavari (*Asparagus racemosus*), Guduchi (*Tinospora cordifolia*), and Ashwagandha (*Withania somnifera*) are well-balanced to augment the therapeutic effectiveness of Chyawanprash. Chyawanprash is more than just a blend of herbs; it's a whole-person approach to well-being, covering everything from immune system support to improved digestion and energy levels. Its creation is evidence of the great knowledge of Ayurveda, which emphasises the body, mind, and spirit being interdependent in the quest for perfect health. Brown in colour and semisolid, chyawanprash has a sour and sweet flavour. It is made by combining over fifty processed minerals, herbs, and spices in precise amounts to create a synergistic mixture. In Ayurveda, it falls under the category of Rasayana, which enhances the body's integrity or health by a variety of means, including better digestion, a delayed ageing process, the elimination of degenerative processes, and many more.(1) This study aims to investigate the formulation process of Chyawanprash, clarifying the choice and handling of botanical materials as well as the conventional techniques used in its creation. In addition, it aims to assess the physicochemical properties and bioactive components of chyawanprash in order to clarify its therapeutic potential as well as its standards of quality. This research intends to contribute to a deeper knowledge of Chyawanprash and open the road for its adoption into modern healthcare practices by bridging the gap between Ayurvedic wisdom and scientific examination. In the process, it embraces the rigours of scientific investigation in the goal of holistic wellness while attempting to preserve the legacy of this age-old elixir.

II. MATERIALS AND METHODS

Materials :

Table 1: Ingredients of Chyawanprash

| Sr. No. | Name of the drug | Latin name | Quantity |
|---------|------------------|------------------------------|----------|
| 1. | Amla | <i>Emblica officinalis</i> | 2kg |
| 2. | Bel | <i>Aegle marmelos Correa</i> | 12.50gm |
| 3. | Shalparni | <i>Desmodium Gangeticum</i> | 12.50gm |
| 4. | Gambhari | <i>Gmelina arborea</i> | 12.50gm |
| 5. | Gokharu | <i>Tribulus terrestris</i> | 12.50gm |
| 6. | Punarnava | <i>Boerhavia diffusa</i> | 12.50gm |
| 7. | Shatavari | <i>Asparagus racemosus</i> | 12.50gm |
| 8. | Ashwagandha | <i>Withania somnifera</i> | 12.50gm |
| 9. | Jeevanti | <i>Leptadenia reticulata</i> | 12.50gm |
| 10. | Bhueawala | <i>Phyllanthus niruri</i> | 12.50gm |
| 11. | Pippali | <i>Piper longum</i> | 12.50gm |
| 12. | Kakad Singi | <i>Pistacia integerrima</i> | 12.50gm |
| 13. | Nagarmotha | <i>Cyperus scariosus</i> | 12.50gm |
| 14. | Varahikand | <i>Dioscorea bulbifera</i> | 12.50gm |
| 15. | Vidarikand | <i>Pueraria tuberosa</i> | 12.50gm |
| 16. | Gulvel | <i>Tinospora cordifolia</i> | 12.50gm |
| 17. | Ringani | <i>Solanum virginianum</i> | 12.50gm |

| | | | |
|-----|---------|------------------------------|---------|
| 18. | Bruhati | <i>Solanum indicum Linn</i> | 12.50gm |
| 19. | Kachur | <i>Curcuma zedoaria</i> | 12.50gm |
| 20. | Ghee | - | 200gm |
| 21. | Gud | <i>Saccharum officinarum</i> | 1kg |
| 22. | Honey | <i>Apis mellifera</i> | 200gm |
| 23. | Khajur | <i>Phoenix dactylifera</i> | 500gm |

Method of Preparation :


Since there was no standard operating procedure (SOP) in existence back then, different manufacturers and locations have different processes for preparing chyawanprash. The following is an explanation of the standard procedure for making chyawanprash: 50 grammes of the subsequent plants, accordingly Bel, arni, gambhari, arlu, patla, gokhru, shalparni, brihati, kantakari, kakkdash- ingi, munnaka, harde, giloy, bala, bhumiama, adusa, jivanti, kachur, pushkarmool, nagarmotha, magdaparni, mashparni, shalparni, prishparni, pippali, kaknasa, varahikand, vidarikand, punarnawa kanwal, agar, chandan, shatavari and ashwagandha are submerged in around 16 litres of water. 500 Indian gooseberry fruits, each weighing between 15 and 20 grammes, or 6.5 kg in total, are wrapped in a clean towel and immersed into the plant combination mentioned above. The mixture is heated to a fourth of its original volume. Once the cloth is removed, the seeds are removed from the amla, the fibres are removed by rubbing the amla peels against a mesh, and then amla pithi is ready. After filtering the decoction, marc is disposed of. In an iron pan, 500 grammes of ghee and 500 grammes of oil are combined with amla pithi and cooked until red. Plant decoction and sugar syrup are added to a skillet and cooked until the ghee begins to separate. Powder comprising 150 grammes of vanshlochan, 100 grammes of pippali, and 10 grammes of each of nagkesar, elaichi, tamal-patra, and dallani is blended

once the pan is taken off the fire. The final product is created when it has cooled down and has a consistency similar to fruit jam. It has a dark shiny brown hue. 250 grammes of old honey is added. A few Ayurvedic additives are used for specific health benefits, including shukti bhasam (100 gm), abharak bhasam (100 gm), shring bhasam (100 gm), makardhawaj (25 gm), lavang (clove) (25 gm), and chandi (silver foil) (75 gm).(2-6,8,16-18,30) The recommended dosage for chyawanprash is such that it has no effect on appetite or hunger.(2-6,8,16-18,30,31) Take 12–28 grammes of chyawanprash with 100–250 millilitres of milk.(31,32) It is recommended that people with respiratory diseases, such as asthma, refrain from consuming milk or curd.(31)

Image 1: Preparation of Chyawanprash.



Label Clams : Image 2: Label of Chyawanprash

| | | |
|--|--|--|
| <p>Chyawanprash AUTHENTIC AYURVEDA Charaka Samhita special</p> | <p>Dosage: 1 or 2 teaspoonfuls, twice a day. Can be taken on bread, crackers, milk, juice, or soft drink</p> | <p>ALL NATURAL</p> |
|  <p>Net weight : 250gm Batch no : 1B Mfd. Date : 23/1/2024 Mfd. by : SUCOP Kharadi, Pune.</p> <p>Uses: Anti-stress, antioxidant, immunity support, respiratory conditions, rejuvenator.</p> | <p>Usage precautions: Avoid during pregnancy or nursing. This product is not suitable, for diabetic individuals.</p> <p>Caution: To be taken under medical supervision</p> <p>Container should be store in cool place</p> <p>Best use within one year from the date of packing</p> | <p>Each nearly about 100g of Chyawanprash awaleha is prepared from:</p> <p>Bel, Gambhari, Shalparni, Kakdashingi, BhumiAmala, Jivanti, Nagarmotha, Pippali, Varahikand, Punarnawa, Shatavari, Ashwagandha, Balamul, Vidarikand, Gulvel, Ringi, Darli, Ghee, Gud, Honey, Khajur, Amla</p> |

Here, W stands for the weight of the empty crucible in grammes, W2 for the weight of the crucible holding ash in grammes, and W1 for the weight of the initial samples in grammes.

Samples for Evaluation :

Sample 1 : Formulated Chyawanprash.

Sample 2 : Patanjali Chyawanprash (Markated Chyawanprash).

Evaluation Methods⁽³³⁾ :

1. Preliminary Evaluation :

The organoleptic features of the prepared chyawanprash, such as its nature, colour, taste, and odour were determined.

2. Determination of Moisture Content :

Using a vacuum oven, the AOAC 934.01 procedure was followed to determine the moisture content. In a nutshell, the formula below was used to determine the percentage of moisture contained in the samples:

$$\text{Moisture Content} = (W_1 - W_2) / (W_1 - W) \times 100.$$

Here, W1 is the crucible's weight in grammes with samples before drying, W2 is the crucible's weight in grammes with samples after drying, and W is the crucible's empty weight crucible in g following cooling and heating.

3. Determination of pH :

Using a pH metre, the pH of each sample was measured after an aqueous solution of the samples was prepared at a ratio of 1% w/v.

4. Determination of Ash Value :

The AOAC 923.03 technique was used to determine the samples' total ash content. Next, ash % was computed using the following equation:

$$\text{Ash Value} = (W_2 - W) / (W_1 - W) \times 100.$$



Image 3: Determination of Ash Value.



Image 4: Determination of Moisture Content.

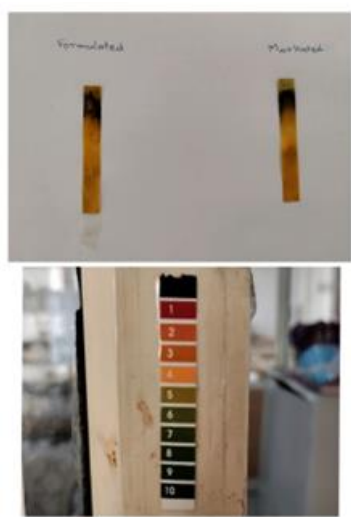


Image 5: Determination of pH.

5. Determination of Ash Value of Crude Drugs :

Accurately clean and weigh a crucible (often made of silica or porcelain). Take a predetermined amount of the crude medicine in powder form (according to pharmacopoeial standards or a particular protocol). After the material is completely charred, place the sample in the crucible and light it over a hot plate or in a muffle furnace at a temperature not to exceed 450°C. After letting the crucible cool in a desiccator, precisely weigh it. The total amount of ash is represented by the weight of the residue.⁽³⁴⁾

$$\text{Ash Value} = (W_2 - W) / (W_1 - W) \times 100.$$

Here, W stands for the weight of the empty crucible in grammes, W2 for the weight of the crucible holding ash in grammes, and W1 for the weight of the initial samples in grammes.



Image 6: Ash Value of Crude Drugs.

III. RESULTS AND DISCUSSION

Table 2: Evaluation of Chayawanprash.

| Parameter | Committee Standard ⁽³⁵⁾ | Observation | | Inference |
|-----------|------------------------------------|--------------------|--------------------|------------|
| | | Sample 1 | Sample 2 | |
| Colour | Brown | Brown | Brown | Acceptable |
| Odour | Specific odour | Specific odour | Specific odour | Acceptable |
| Taste | Pleasant and acrid | Pleasant and acrid | Pleasant and acrid | Acceptable |
| Nature | Semisolid | Semisolid | Semisolid | Acceptable |

| | | | | |
|------------------|-------------------|-------|-------|------------|
| pH | 4.35 – 5.20 | 4.9 | 5.2 | Acceptable |
| Moisture Content | Not more than 13% | 7% | 6% | Acceptable |
| Ash Value | Not more than 9% | 7.81% | 4.52% | Acceptable |

Table 3: Ash Value of Crude Drugs.

| Sr.No. | Name of the drug | Committee Standard ⁽³⁶⁾ | Observation | Inference |
|--------|------------------|---------------------------------------|-------------|------------|
| 1 | Bel | 9.59 ± 1.87 to 15.54 ± 1.21% (w/w) | 16.6% | Acceptable |
| 2 | Shalparni | | 14% | Acceptable |
| 3 | Gambhari | | 10.3% | Acceptable |
| 4 | Gokharu | | 12.4% | Acceptable |
| 5 | Punarnava | | 15.33% | Acceptable |
| 6 | Shatavari | | 11.3% | Acceptable |
| 7 | Ashwagandha | | 13% | Acceptable |
| 8 | Jeevanti | | 14.3% | Acceptable |
| 9 | Bhueawala | | 9.33% | Acceptable |
| 10 | Pippali | | 8% | Acceptable |
| 11 | Kakad Singi | | 12.8% | Acceptable |
| 12 | Nagarmotha | | 11% | Acceptable |
| 13 | Varahikand | | 9.7% | Acceptable |
| 14 | Vidarikand | | 14.8% | Acceptable |
| 15 | Gulvel | | 15% | Acceptable |
| 16 | Ringani | | 13.7% | Acceptable |
| 17 | Bruhati | | 11.7% | Acceptable |
| 18 | Kachur | | 9.6% | Acceptable |

According to table 2, Both Sample 1 and Sample 2 exhibit characteristics that align with the committee standard. Their color is brown, they possess a specific odour, their taste is described as pleasant and acid, and their nature is semisolid. These attributes are within the acceptable range according to the committee standard. The pH values of both samples fall within the acceptable range defined by the committee standard. Sample 1 has a pH of 4.9, while Sample 2 has a pH of 5.2. Despite being slightly different, both values are within the specified range of 4.35 – 5.20. The moisture content of both samples is well below the maximum threshold set by the committee standard. Sample 1 has a moisture content

of 7%, and Sample 2 has a slightly lower moisture content of 6%. These values indicate that both samples meet the requirement for moisture content. Both Sample 1 and Sample 2 have ash values that are below the maximum limit specified by the committee standard. Sample 1 has an ash value of 7.81%, while Sample 2 has a lower ash value of 4.52%. These values indicate that both samples are acceptable in terms of ash content.

One of the most important analytical steps in pharmacognosy, the study and identification of medicinal plants, is figuring out a crude drug's ash value. Determining the ash value aids in determining how much inorganic material—which may include

salts, minerals, or other non-volatile impurities—is present in the crude medication. As per table 3 shows ash value of crude drugs which are used in preparation of chaywanprash, the committee standard for Bel specifies a range of 9.59 ± 1.87 to $15.54 \pm 1.21\%$ (w/w). The observed ash value is 16.6%, slightly higher than the upper limit of the range. Despite this slight deviation, it is deemed acceptable. Shalparni(14%), Gambhari(10.3%), Gokharu(12.4%), Punarnava(15.33%), Shatavari(11.3%), Ashwagandha(13%), Jeevanti(14.3%), Bhueawala(9.33%), Pippali(8%), Kakad Singi(12.8%), Nagarmotha(11%), Varahikand(9.7%), Gulvel(15%), Ringani(13.7%), Bruhati(11.7%), Kachur(9.6%), Vidarikand(14.8%) for all these drugs, the observed percentage of ash value fall within the acceptable range specified by the committee standard. No deviations beyond the acceptable limits are observed.

IV. CONCLUSION

In conclusion, all parameters examined by Samples 1 and 2 satisfy the committee criteria, according to the data presented. They exhibit consistency in terms of colour, flavour, nature, pH, moisture content, and ash value, suggesting that they are appropriate for the use or application under consideration.

Overall, the percentage of ash values for all other crude drugs—aside from Bel—meet the committee criteria. Even in Bel's instance, the variation is deemed acceptable despite being slight. As a result, according to the committee norm, the percentage of ash value for all used crude drugs is considered appropriate.

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Cite this article as :

Rushikesh Krishna Dhale, Dr. R.Y. Patil, Siddhant Dhupal, "Formulation of Chyawanprash and Comparative Evaluation with Marketed Chyawanprash", International Journal of Scientific Research in Science and Technology (IJSRST), Online ISSN : 2395-602X, Print ISSN : 2395-6011, Volume 11 Issue 1, pp. 577-584, January-February 2024. Available at doi : <https://doi.org/10.32628/IJSRST52411189>
Journal URL : <https://ijsrst.com/IJSRST52411189>