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FORMULATION AND COMPARATIVE EVALUATION OF THE AMLA ASAVA AND AMLAKI MASHI ASAVA

Swapnil S. Tirmanwar[1]*, Pooja S. Tarahane[2], Puja R. Nagarkar[3], Shadab R. Sheikh[4], Sonal P. Motghare[5]

[1,2,3,4]Student, [5]Assistant Professor

Department of Pharmacognosy, Priyadarshini J. L. College of Pharmacy, Nagpur, Maharastra, India- 440016.

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***Corresponding Author**
Swapnil S. Tirmanwar
Student, Department of Pharmacognosy, Priyadarshini J. L. College of Pharmacy, Nagpur, Maharastra, India- 440016.

ABSTRACT

The traditional Indian medical system known as Ayurveda makes use of natural substances to make medications. With more than 1,200 plant species, almost 100 minerals, and more than 100 animal products, this system has been in use for thousands of years. Asava is a hydro-alcoholic concoction that has an infinite shelf life and is thought to become more effective with age, making it one of the unusual dose forms discovered by Ayurveda. Mashi, a powdery black-colored formulation of a plant that has been partially charred or roasted, is another significant comparable dose form. The goal of a recent study was to generate Mashi Asava, which has the same potency as regular Asava by combining Asava and Mashi. Amla Mashi Asava and traditional Amla Asva are to be compared and evaluated uniformly as the goal of this study.

KEYWORDS: Asava, Mashi, Comparative, Standardization.

INTRODUCTION

Many scholars believe that Ayurveda, which translates to "The Science of Life" in Sanskrit, is the oldest medical science. It is frequently referred to as the "Mother of All Healing" and has its origins over 5,000 years ago in India. The Indian subcontinent continues to follow Ayurveda, a medicinal system that translates as "knowledge of life" (Veda) (Ayur). The goal of Ayurvedic medicine is to prevent illness rather than treat it. Ayurveda's daily practice

emphasizes preserving the balance between the natural world and the self to promote maximum health.

The phytoconstituents found in Emblica officinalis Gertinis make it a popular Ayurvedic medicine with numerous health advantages. The two main active ingredients in amla, ascorbic acid, and gallic acid, are plentiful and have antioxidant and neuroprotective qualities. Water-soluble antioxidants called ascorbic acid are naturally present in plant-based diets, such as peppers, citrus fruits, tropical fruits, spinach, and cabbage.

Although it is not well recognized, Asava-Arishta is a continuous hydro-alcoholic extraction technique that has been employed in Ayurveda for a very long time. It is believed that this sophisticated dosage form changes several phytochemical substances found in the herbs used to produce it, increasing their potency or reducing their toxicity while also facilitating faster absorption. Arishtas and Asavas are fermented herbal drinks made using the ancient Ayurvedic method. By fermenting herbal liquids or decoctions with the addition of sugar, they are alcoholic remedies. Fresh herbal juices are used to make Asavas, whereas herb decoctions made with boiling water are used to make Arishtas.

Mashi is a crucial component of Ayurvedic medicine dose forms. A powdered black-colored mixture of partially charred or roasted plant or animal is commonly referred to as "Mashi Kalpana." Any herb or animal product that is heated gradually will eventually undergo combustion when a certain temperature is reached. The material begins to turn black at the beginning of the process when smoke starts to form. Next, the characteristic smell of burning is detected. Mashi is thought to have finished forming when the entire substance turns black and all of the smoke has disappeared. This substance is ground into a fine powder that should have the same flawless black color as charcoal powder.

One well-known asva is Amla asva, which is made by fermenting amla using a conventional technique. The powdered fruit from the *Embelica officinalis* Garenth. plant is the ingredient utilized in the preparation. Two formulations are made: one with the traditional method of preparing amla asava, and another with the use of amla mashi in place of amla powder. The physicochemical features of each formulation will be compared.

Plant profile

Kingdom: Plantae

Order: Malpighiales

Family: Euphorbiaceae

Genus: Phyllanthus

Species: Emblica

Figure 1: Embelica officinalis.

MATERIAL AND METHOD

Formulation of amlaki mashi: Using the Bahirdhum Padhati Mashi (BPM) method, make Mashi from powdered amla. The powdered amla was placed in an earthenware pot and cooked until it turned black and became carbonized.

Formulation of asava: The conventional method was used to prepare asava. Using the age-old method known as A1, the standard Amlaki Asava was created. The Amlaki mashi that was previously made was utilized in place of the typical amla powder in the formulation of the Amlaki mashi asava. The following table was used for the formulation.

After combining all the components in an earthenware pitcher, *Woodfordia fruticose* flowers were added as a means of initiating fermentation. One-third of the vessel remained empty after it was full. Six months were allowed for fermentation after the clay vessel's lid was securely fastened. The fermented product was filtered and stored in the appropriate containers after the vessels were opened after six months.

Table 1: Ingredients for formulation of asava.

Ingredients	Common name	Part used	Quantity
Woodfordia fruticose	Dhataki	Flower	100 gm
Embelica officinalis	Amla/Amalaki	Fruit	100 gm
Water	Jala	–	6 lit.
Apies dorsata	Madhu (honey)	–	840 ml
Sachharum officinarum	Guda (jaggery)	–	1280 gm

Evaluation parameters

Organoleptic evaluation: The formulations' color, odor, and taste were evaluated using an organoleptic assessment by WHO criteria. Organoleptic evaluation of the compositions' color, odor, and taste was carried out by WHO criteria.

Determination of solid content: 5 ml of each sample was taken in the different tared dish and was evaporated at a low temperature until the liquid was removed and then heated until the residue was dried. After that, it was transferred to an oven and dried to constant weight at 105 °C. Five milliliters of each sample were placed in a separate tart dish, evaporated at a low temperature to extract the liquid, and then heated to dry the residue. It was then put in an oven and dried at 105 °C until it reached a steady weight.

Determination of specific gravity: A pycnometer was used to measure the specific gravity according to established protocol.

Determination of viscosity: Using Ostwald's viscometer, the samples' viscosity was ascertained.

Determination of alcohol content: A 25 ml sample was taken and placed in Round Bottom flasks. 150 ml of water and pumice powder were added to the sample to prevent bumping. The sample was then refluxed until 90 ml of distillate was recovered and cooled to 25 °C in a 100 ml volumetric flask. Distilled water was used to adjust the volume to 100 milliliters. Next, the sample's specific gravity was measured and compared to a standard text. The alcohol content was then calculated using the table provided in I.P.

Determination of pH: A digital pH meter was utilized to ascertain the pH of the mixtures.

Determination of refractive index: The Abbes Refractometer was utilized to make the determination.

Determination of sugar content: A solution of 0.475g sucrose was made in 250 ml of distilled water. Add 2 ml of concentrated hydrochloric acid to it and gently simmer for 30 minutes to turn it into inverted sugar. After nearly two hours in a hot water bath, the solution was neutralized with sodium carbonate. A 500 ml dilution of the neutralized solution was made. After taking 5 milliliters of each sample, 25 milliliters of water, 2 milliliters of HCl, and two hours of boiling were added. Following filtering, the filtrate was gathered, and

neutralized with sodium bicarbonate, and the volume was increased to 250 milliliters. Every time Fehling's solution was made, equal parts Fehling's A and B were combined. Fehling's solution (10 ml) was taken and diluted with an equal volume of distilled water in a porcelain evaporating basin. After letting the mixture boil, it was titrated against a typical inverted sugar solution until the blue hue completely vanished. Following a period of cooling to settle the cuprous oxide precipitate, the solution was brought back to a boil and continued to be heated until the endpoint was neared. The sample was dissolved in 5 milliliters of water, diluted to 250 milliliters, and titrated against 25 milliliters of Fehling's standard solution.

Determination of acid value: 50 milliliters of an equal volume of solvent ether and alcohol were used to dissolve 10 milliliters of the sample. This solution was titrated using 0.1N NaOH, 1 ml of Phenolphthalein was added as an indicator, and the titration was continued until the solution, after 30 seconds of shaking, remained slightly pink. The sample's acid value was determined using the following formula:

n × 5.61 Acid value = w

n = the number of ml of 0.1N sodium hydroxide required

w = the weight in g of the substance.

Phytochemical screening: The formulations were shown to contain active phytochemical elements such as alkaloids, carbohydrates, glycosides, tannins, terpenoids, and saponins.

Total phenolic content/ Gallic acid equivalent (GAE)

After dissolving 10 mg of gallic acid in 100 ml of 50% methanol (100 µg/ml), the mixture was further diluted to provide 6.25, 12.5, 25, or 50 µg/ml. Ten milliliters of distilled water were added to a one-milliliter aliquot of each dilution, which was placed in a test tube. Following the addition of 1.5 ml of Folin Ciocalteu's reagent, the mixture was incubated for 5 minutes at room temperature. Each test tube received 4 ml of 20% (w/w) Na2CO3, which was then agitated, adjusted with distilled water to reach 25 ml, and allowed to stand at room temperature for 30 minutes. Using a UV/VIS spectrophotometer (Shimadzu, Japan) and distilled water as the blank, the absorbance of the standard was determined at 725 nm. Using the standard curve as a reference, the procedure was applied to a 1000 ppm solution of the sample.

RESULTS AND DISCUSSION

After being effectively formulated, both formulations were examined and assessed using several criteria. Using Amlaki and Mashi Asava as A1 and A2, respectively. The organoleptic characteristics results are listed in Table 2. Tables 3 and 4 list the outcomes of the phytochemical screening and physicochemical characteristics. outcomes of the organoleptic qualities listed in Table 2. The findings of the phytochemical screening and physicochemical parameters are shown in Tables 3 and 4. Amlaki Mashi Asva had a total phenolic content of 0.064 ± 0.001% w/v and Amla Asva had a total phenolic content of 0.072 ± 0.001% w/v according to the folin-calcium reagent test, which compared the results to gallic acid as a standard.

Table 2: Organoleptic parameters.

Organoleptic parameters	**A1**	**A2**
Color	Dark Brownish	Dark Brownish
Odor	Alcoholic	Alcoholic
Taste	Bitter/Sour	Bitter/Sour

Table 3: Physicochemical parameters.

Physicochemical Character	**A1**	**A2**
Specific gravity	1.078(+-0.01)	1.065(+-0.01)
pH	3.82(+-0.03)	3.54(+-0.03)
Total solid content (%)	8.69(+-)	6.85(+-)
Alcohol content (%)	9(+-0.02)	10(+-0.02)
Sugar content (%)	85(+-0.01)	85(+-0.01)
Refractive index	4.06(+-0.07)	4.01(+-0.05)
Viscosity	1.97(+-0.3)	1.91(+-0.3)
Acid value (%)	3.27(+-0.3)	3.14(+-0.3)

Table 4: Phytochemical screening.

Sr. No.	**Chemical test**	**L1**	**L2**
1	**Alkaloid** Dragondroff's test Mayers test	 - -	 - -
2	**Carbohydrate** **Molish test** **Fehlings test** **Benedict test**	 + + +	 + + +
3	**Glycosides** Bortanger test	 +	 +
4	**Saponin Foam test**	+	+
5	**Tannin**	+	+
6	**5% FeCl3 solution test**	+	+
7	**Lead acetate solution (5%)**	+	+

8	**Terpenoid** Salwoski test	+	+
9	**Amino acid**	-	-

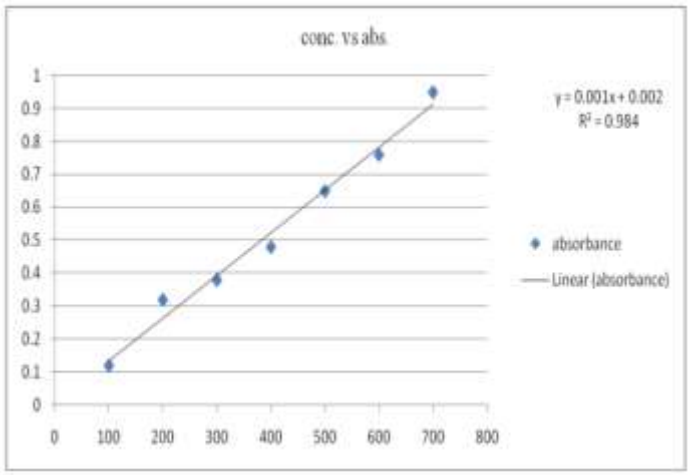

Figure 2: Standard curve of gallic acid equivalents (Gae).

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