

ORIGINAL RESEARCH ARTICLE

**Standard Manufacturing Procedure of Kumaryasva Prepared From Aloe Vera Whole Leaf Gel and Inner Gel**

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**ABSTRACT**

Asava and Arishta are self-generated herbal fermentations of traditional Ayurvedic system. They are alcoholic medi-caments prepared by allowing the herbal juices or their decoctions to undergo fermentation with the addition of sugars. Kumaryasva is an important drug of Ayurveda and widely used by Ayurvedic physicians for Kasa (Cough), svasa (Dyspnoea/Asthma), Arsa (Haemorrhoids), Vata vyadhi (Disease due to Vata dosha), Apasmara (Epilepsy), Ksaya (Pthisis) etc. This study is aimed to set the standard operational procedure of Kumaryasva. Although no directed indication regarding the whole leaf aloe gel, however here an attempt was made to prepare Kumaryasva from whole leaf aloe gel and inner aloe gel as well as compare the same. It is found that whole leaf gel found more convenient for preparation of Asava as it has improved taste comparatively less time and it has cost effective as there is no need for extraction unit for Inner gel of aloe at industrial level.

**Key words:** Aloe Vera, Whole leaf gel, Inner gel, Kumaryasva, Ayurvedic Alcoholic Preparation.

**INTRODUCTION**

Asava and Arishta are self-generated alcoholic preparations of traditional Ayurvedic system. It comes in Sandhana Kalpana which means liquid in which drugs kept for long period, getting fermented<sup>[1]</sup>. 'Asavas' and 'Aristas' are popularly used in Ayurvedic practice. These preparations occupy prime position in Indian Pharmacopoeia on account of their superiority to the other preparations. They have long shelf life, quick absorbable nature and high therapeutic effectiveness. They are equated Medicated wines (in terms of process) prepared by allowing the herbal juices or their decoctions to undergo fermentation with the addition of sugars. Generally Asava is cold infusion of herbs subjected to fermentation and Arishta is decoction prepared after boiling with herbs subjected to fermentation.

**Ingredients and their ratios:** Coarse powder to be used and the ratio of herbs to water for decoction depends on the part used e.g. wooden material needs to be boiled in 32 times water till one fourth part remains while soft material like leaves 4times water generally 16 times water.

**Process:** The tradition process ground herbs allowed Extraction via infusion or Decoction and

then preparation of fermentation medium Jaggery and Honey with Prakshep Drvyas Flower buds and powdered herbs and kept for fermentation process.

**Pot (Fermentor Vessel):** Earthen Pot which allows product breathing. Pots fumigated<sup>[2]</sup> with herbs for sterilization and applied ghee<sup>[3]</sup> under the pot and feel up the material and keep it under rice husk<sup>4</sup> for temperature control. Place needs a neat and clean place without any pollution and away from any wet and dump area.

**Process mechanism:** It's a complex anaerobic fermentation with jaggery with inoculums *Saccharomyces* sp. from dhataki/ honey and probably *Bacillus* sp. from jaggery. Parishes Dravyas controls fermentation rate its ads natural Flavor act as bio-Availability enhancer. Alcohol generation terminates fermentation at the threshold point works as co-solvent for prakshep and act as preservative in the end of the product made the preparation a longer stability.

**Testing Process (Matchbox test):** Carbon dioxide comes out during fermentation as long as match stick extinguished fermentation is on and when matchbox does not extinguish fermentation completed.

In Sandhana Kalpana ingredients and its ratio plays an important role without Drava Dravya it is not possible to prepare sandhana. Water which is dirty, being mixed with slush, algae, weed and leaves, which is not exposed to sun light and wind and which is mixed with old and fresh water should not be used.

Present study is focused on new method for Kumaryasva preparation which is close to classical principle without putting much energy and a more bio- available product. General operated process used by industrial communities and the key factors in preparation of Asava like Ingredients and their ratio, process, the pot, Season, the place and testing method are discussed in this article.

Kumaryasva is an important formulation of Ayurveda which is used in Gulma (Abdominal lump), Kasa (Cough), svasa (Dyspnoea/Asthma), Arsa (Haemorrhoids), Vata Vyadhi (Disease due to Vata dosha), Apasmara (Epilepsy), Ksaya (Pthisis), Udara (Diseases of abdomen / enlargement of abdomen), Manyaroga (Diseases of Neck), Agnimandya (Digestive impairment), Kosta sula (Pain in abdomen), Nasta Puspa (Amenorrhoea) [5].

## MATERIALS AND METHODS

**Procurement and authentication of raw materials:** Aloe leaves procured from Balachadhi Costal area Near Jamnagar. Raw drugs (**Table 1**) are collected from pharmacy Gujarat Ayurved University, Jamnagar. Raw drugs identification and authentication by macro and micro characters has done in the Pharmacognosy Laboratory, IPGT & RA, GAU and Jamnagar.

In present study Kumaryasva is prepared as per the reference of Yoga ratnakara Utrardha Gulma rogadohikar [6]. In which the Drav dravya (Liquid media) is Kumari Swarasa and Haritaki Kwatha. In present study whole leaf aloe gel and inner aloe gel is taken.

**Preparation of Raw drugs:** Collected drugs were cleaned, washed and were cut into middle 3-4 pieces of each leaf. Before cutting the pieces lateral spins were cut with the help of knife. These leaves were equally divided into two parts. In the first part, the Green Rind portion scrap out and Inner gel collected and subjected for grinding and squeezing. Another part was taken as such for preparation of aloe gel. Drugs (2 to14) Table 1. were properly shade dried, powdered separately up to required size, packed and sealed air tightly in separate containers. All the containers are

labeled properly and placed in a cool moisture free sufficiently ventilated closed room.

**Preparation of Swarasa:** Fresh leaves washed with water to remove dust and mud. In one part whole leaf as it is grinded and in other one rind of leaves was scraped out and grinded in mixer for 8-12 minutes to make a thick mucilaginous gland strained for obtaining Swarasa [2].

**Preparation of Kwatha:** Yavakuta Churna (coarse powder) of Haritaki fruit pericarp was taken in stainless steel vessel for overnight soaking. Next day, Kwatha was prepared by reducing water to 1/4<sup>th</sup>. Kwatha was strained with double layered cotton cloth and measured [2].

**Preparation Prakshep Dravya:** The dried ingredients Pulverized (Prakshep dravya) numbered 3-14 in the formulation to a coarse powder.

**Fermenting agent (Sandhana Dravya):** As fermentation agent Jaggery, honey and Dhataki flower buds were used. Dhataki flower buds were washed with hot water for removal of dust and any bacterial and microbial contamination. And for 0.3% baker's yeast of total of liquid media was added as additional fermenting agent.

Liquid media, Sandhana Dravya and Prakshepa dravyas along with Guda, Madhu, Prakshepa and baker's yeast (0.3%) mixed well. The worts were filled in Stone vessel porcelain jar [7] for fermentation in dhanya rashi.

## RESULTS AND DISCUSSION

Although no directed indication regarding the whole leaf aloe gel, however here an attempt was made to prepare Kumaryasva from whole leaf aloe gel and inner aloe gel as per the reference Yoga ratnakara Utrardha Gulma rogadohikar .

Kumari Swarasa is the main ingredient of Kumaryasva. According to Charaka, the juice of itself and means the juice of the dravya hence is said to be its Swarasa [8]. Fresh herb collected and crushed thoroughly and squeezed to get fresh juice; it is called as "Swarasa." This doesn't accomplish the methods which have mentioned earlier and also the concept of use drug as a whole. Where the plants give less quantity of Swarasa by these methods then its Swarasa (juice) is extracted or prepared by Putapaka method, which is dravyas are collected and its bunch is formed and covered by a layer of clay is formed over it and this thing is kept in the fire. After it becomes red the shell or muda and wheat flour is removed and swarasa (juice) is extracted either by crushing or filtering e.g. Vasa, Vata etc. So, in each method of swarasa extraction the whole part

of drug we get as a Swarasa. But aloe has sufficient amount of liquid portion and there is no reference found where Kumari has described under special method for Swarasa extraction.

The Organolaptic difference is described in (Table 2) as the whole leaf gel has green colour because of sufficient amount of chlorophyll and it has slightly more bitter in taste. During making of Swarasa more yield of whole leaf gel has get than inner gel. The pH is an important factor in sandhana Kalpana and in the both kind of gels have the same range of pH as shown in (Table 3). After completion of fermentation process the time and final yield was recorded as shown in (Table 4). It is found that if the amount of liquid portion

and method of preparation are kept same then the both the kinds of Kumaryasva prepared almost in the same time duration and Kumaryasva made up by whole leaf gel gives slightly more yield of final product and it takes almost same and less days in completion of fermentation.

After administrating the final product after the maturation it is found that there is a slightly colour change in Whole leaf having Asava has slightly light colour than Asava made up by inner aloe gel. Taste is an important Organolaptic parameter for any alcoholic preparation in present study the whole leaf gel having Kumaryasva has good taste compare to other one.

**Table 1: Ingredients of Kumaryasva**

S. No	Ingredient	Part used	Authenticated as	Procured from	Amount
1	Kumari rasa	Leaf	<i>Aloe barbadensis</i> Linn.	Balachadhi, Jamnagar	4 l
2	Haritaki	Fruit pericarp	<i>Terminalia chebula</i> Retz.	Pharmacy, GAU	1 l
3	Dhataki	Flower	<i>Woodfordia fruticosa</i> Linn	Local market, Jamnagar	256 g
4	Jatiphala	Seed	<i>Myristica fragrans</i> houtt.	Pharmacy, GAU	16 g
5	Lavanga	Flower bud	<i>Syzygium aromaticum</i> Linn	Pharmacy, GAU	16 g
6	Kankola	Fruit	<i>Piper cubeba</i> linn.f.	Pharmacy, GAU	16 g
7	Jatamansi	Rhizome	<i>Nardostachys jatamansi</i>	Pharmacy, GAU	16 g
8	Kababka	Fruit	<i>Piper cubeba</i>	Pharmacy, GAU	16 g
9	Chvyva	Stem	<i>Piper retrofractum</i> Vahl.	Pharmacy, GAU	16 g
10	Eranda	Root	<i>Ricinus communis</i> linn.	Pharmacy, GAU	16 g
11	Jatipatra	Arilus	<i>Myristica fragrans</i> houtt.	Pharmacy, GAU	16 g
12	Karkatashrngi	Gals	<i>Pistacia integerrima</i> Burgo.	Pharmacy, GAU	16 g
13	Bibhitaka	Pulp	<i>Terminalia bellierica</i> Roxb.	Pharmacy, GAU	16 g
14	Pushkarmula	Root	<i>Inula racemosa</i> linn.	Pharmacy, GAU	16 g
15	Tamra bhasma	--	Calcined Tamra	Pharmacy, GAU	16 g
16	Lauha bhasma	--	Calcined Lauha	Pharmacy, GAU	8 g
17	Guda	--	Organic jaggery	Local market, Jamnagar	1.2 kg
18	Madhu	--	Honey	Pharmacy, GAU	1 kg

**Table 2: Organolaptic Observations of Kumari Swarasa**

S. No	Ingredients	Whole leaf Gel	Inner Gel
1	Taste	Bitter	Less bitter
2	Colour	light green	Off white
3	Consistency	mucilaginous	mucilaginous

**Table 3: Average results during preparation kumari Swarasa**

S. No	Ingredients	Whole leaf Gel	Inner Gel
1	Quantity of fresh green herb	200 g	200 g
2	Average time of rotation	8-12 min	8-12 min
3	Quantity of Swarasa obtained	194ml	180 ml
4	Swarasa obtained (%)	95%	90%
5	pH	4-5	4-5

**Table 4: Results and observation for different batches of kumari Asava**

Sample	Batch-I		Batch-II		Batch-III		Batch-IV		Batch-V	
	A-I	A-II	B-I	B-II	C-I	C-II	D-I	D-II	E-I	E-II
Kumari Swarasa (l)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Haritaki kwatha (ml)	500	500	500	500	500	500	500	500	500	500
Fermentation takes place (in days)	20	20	20	20	20	23	20	22	20	22
Yield of Kumaryasva (l)	2.30	2.00	2.35	2.00	2.30	2.10	2.30	2.10	2.20	2.10

## CONCLUSION

On the basis of pharmaceutical process it is concluded that whole leaf gel is more feasible with later for pharmacy scale and less manual labor too.

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