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# Standard Manufacturing Process of *Sameer Pannag Ras*

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## ABSTRACT

In *Rasashastra*, all *Rasoushadhis* (Mercurial preparations) can be classified under four titles, namely- *Kharaliya rasayana*, *Kupipakwa kalpana*, *Parpati kalpana*, *Pottali kalpana*. Among these *Kupipakwa rasayana* is considered as most important, due to its uniqueness-both in preparation and efficacy. It is a very significant ayurvedic pharmaceutical herbo-mineral preparation consisting of *Sudha Parada* & *Sudha Gandhaka* as main ingredients. It is known as *kupipakwa rasayana* as it is preparing in a *kachakupi*- glass bottle. *Sameer pannag rasa* is an example for *Talastha Kupipakwa Rasayana* mentioning about arsenic mercurial preparation-*Sameer pannag Ras* was first given in '*Rasachandamsu*. The important feature to be noted while preparing *Kupipakwa rasayanas* like *Sameer pannag rasa* is – its temperature pattern. The temperature should be raised gradually as per different stages, for proper observations and preparations. The *Sameer Pannag Ras* was prepared by our department as per the reference of *Rasa chandamsu*. Procedure was started at morning 6.20 am and got finished at night 12.15 pm. It took almost 18 hours for the completion of whole procedure. After this procedure we got total yield of 185.8gm out of 400g total *Kajjali* (46.45%), in which maximum SPR obtained from the bottom of *kupi* ie; 124.1g (66.7% ) and the remaining 61.7 g was collected from the *Galastha* part (33.2%). SPR is mainly indicated in *Tamakaswasa*, *Amavata* and other neurological diseases

**Key Words** *Rasoushadhis*, *Kupipakwa*, *Sameer Pannag Ras*

Received 13<sup>th</sup> August 21 Accepted 06<sup>th</sup> September 21 Published 10<sup>th</sup> September 2021

## INTRODUCTION

Ayurveda is a holistic traditional medical system, usually translated as science of life. It is one among the oldest health system having strong fundamental principles and theory based practices. Rasa shastra, the mercurial science is an important branch of Ayurveda, deals with metals, minerals and herbo mineral preparations, known as

*Rasaushadhis*. All *rasoushadhis* can be bring under four main titles-namely<sup>1</sup>,

1. *Kharaliya Rasayana*
2. *Kupipakwa Rasayana*
3. *Parpati kalpana*
4. *Pottali kalpana*

*Kupipakwa rasayana*, the most popular among these due to its high significance and uniqueness in its preparation and efficacy. It got its name, as



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it is being prepared in *Kupi* -glass bottle. Kupipakwa rasayana formulations are popular for its minimal dosage.

### **Kupipakwa rasayana- Definition**

कूपीइतिकाचकूपी-पक्कंअग्निनापक्कं.

रसस्यपारदस्य-अयनंस्थानम ॥

The term *kupi* means glass bottle; *pakwa* indicates *paka* using fire, the term *rasa* for Parada and *ayana* for specific *sthana*

*Kupipakwa Rasayana* was first mentioned by Acharya Sri Yashodhara in his book-*Rasa Prakash Sudhakara*<sup>2</sup>. A large number of *Kupipakwa Rasayanas* was also mentioned in *Rasa* classics and they are mainly categorized under 3 titles:

- According to Ingredients
- According to manufacturing method
- According to the place of final product

#### 1. According to ingredients

(a) Those which containing *Gandhaka-Sagandha*

E.g.; *Rasa sindura, Makaradhwja rasa*

(b) Those without *gandhaka-Nirgandha*

E.g.: *Rasakarpura*

#### 2. According to place of final product accumulation

(a) *Galastha* or *Kanthasth*: Final product will accumulated

E.g. *Rasasindhura, Mallasindhura*

(b) *Talastha*: Medicine accumulation will be at the bottom of bottle. Also called as *Adhastha*

E.g. *Sameer Pannag rasa*

(c) *Ubhayastha*: Accumulation will be at both neck and bottom of the bottle

E.g. *Purnachandrodaya rasa*

#### 3. According to method of preparation

(a) *AntardhumaVidhi*: *Sharavsamput* method

E.g.; *Rasasindhura*

(b) *Bahirdhumavidhi*: *Kupipakwa* method

E.g.: *Rasakarpura*

*Sameer pannag rasa*, a popular *Talastha kupipakwa Rasayana*<sup>3</sup> first mentioned in *Rasa Chandamsu* having ingredients like *Sudha Parada, Sudha Gandhaka, Somal* and *Haritala*. Later *Manashila* was also added with these, by *Ayurveda Aushadhi Guna Dharma Shastra*. As the name indicates this formulation is mainly recommended for *Vata* vitiation like *amavata, sandhivata* and other *Vata kapha* predominant diseases etc<sup>4</sup>. It is also very effective in case of *Tamakaswasa*<sup>5</sup>.

In this article *Sameer pannag Ras* is prepared using reference mentioned in *Rasa Chandamsu*. During the preparation, standard temperature pattern followed along with other precautions.

## MATERIALS AND METHODS

The preparation was carried out in department of *Rasa Shastra* and *Bhaishajya Kalpana*, Rajasthan Ayurveda University, Jodhpur, Rajasthan.

### Ingredients

1. *Parada* -100g

2. *Gandhaka* -100g

3. *Somala* -100g

4. *Haritala* – 100g

*Bhavana dravya –Tulsi Swarasa*

### Method of preparation<sup>6</sup>



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All the ingredients should be in purified form. So we have done the purification of each ingredient in our departmental pharmacy.

### 1. Purification of Parada<sup>7</sup>

Ingredients

1. *Asudha Parada* -200gm
2. Garlic paste-200gm
3. Saindhav lavan-100gm

Procedure

*Asudha parada* was taken in a clean *khalwayantra* added with equal quantities of *lasun kalka* [garlic paste] and *saindhava lavana* triturated for 7 days.

*Sudha parad* obtained = 136.9gm (68%)

### 2. Purification of Gandhaka<sup>8</sup>

Ingredients

1. *Asudha Gandhaka* -100gm
2. Cow's ghee – 25 g
3. Cow's milk – 2litre
4. Hotwater - quantity sufficient

Procedure

Required *Goghrita* was taken in a table spoon and held over the fire. When this ghee melts completely, powdered *Asudha Gandhaka* was added. Once the *Gandhaka* melted completely, the mixture was poured to the vessel containing milk, through a cloth, to filter out the impurities. *Gandhaka* was allowed to cool and after proper cooling the solidified *Gandhaka* which deposited at the bottom of the container was collected and washed with hot water and allowed to dry it. This procedure was repeated for two more times. Then the final product, pure *Gandhaka* collected carefully, washed with hot water, dried and preserved.

*Sudha Gandhaka* obtained = 96.5gm (96%)

### 3. Purification of Somal<sup>9</sup>

Ingredients

1. *Asudha somal* -500g
2. Cow's milk- 2 litres

Procedure

Powdered *Asudha Sankhiya/somal* was made into *Pottali* (bundle), tied and hung in *dolayantra* with *Godugdha* as liquid media. This process of *swedana* was continued for 1 *yama* (3 hours). Then it was collected and washed with warm water.

Purified *Sankhiya* obtained= 340gm (68%)

### 4. Purification of Harital<sup>10</sup>

Ingredients

1. *Hartala*-150g
2. *Churnodaka* – 2 litres

Procedure

Powdered *hartala* was tied in a cloth and made into *Pottali* and kept for *swedana* in *dolayantra* for 3 hours, with *churnodaka* (lime water) as liquid media. Later purified *hartala* collected and dried.

Pure *harital* obtained =145 gm (96.6%)

### Preparation of Sameer pannag rasa

Initially, *Sudha Parada*, *Gandhaka* taken, powdered and mixed together using *Khalwayantra* to prepare *Kajjali*.

*Kajjali* is further mixed well with *Sudha Sankhiya* & *Harital* and *Bhavana* done with *tulsi swaras* for 3 times. This mixture was filled in *Mritbhavita kachakupi* (7 times mud smeared cloth layers pasted over glass bottle). Then this bottle was kept in muffle furnace up to its neck portion. At around 6.21 am, we had set its temperature in the order of *mridu*, *madhyam* and *teekshna*. During these



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stages different observations and variations in the ingredients were noted.

**Table 1** Temperature pattern and observation of Sameer Pannag Ras in EMF

Time	Temperature in Degree Celsius	Observations
6.21 am	50	No observation
7.00 am	120	No observation
7.32 am	122	Aroma of <i>Tulsi Swarasa</i> started
11.00am	155	Mild white fumes were observed
11.25 am	230	Whitish fumes increased, <i>Kajjali</i> started to melt along with mild smell of sulphur.
11.32 am	239	Light yellowish fumes were observed.
11.37 am	229	Slight visible fumes at neck.
11.44 am	227	Yellow dense fumes
12.00 pm	230	<i>Kajjali</i> started melting
1.30 pm	260	<i>Kajjali</i> became soft, shiny and sticky, level of <i>Kajjali</i> raised up and pushed down with <i>Sheeta shalaka</i> frequently
3.23 pm	334	Blue flames visible
4.00 pm	330	Tiny shining particles were appeared to come out with yellowish fumes.
4.20 pm	340	Level of <i>Kajjali</i> rose up, pushed down with <i>Sheeta shalaka</i> at regular intervals.
4.50 pm	360	<i>Kajjali</i> became more shiny.
5.20 pm	380	Shining particles appeared as floating around the neck.
5.45 pm	440	Level of <i>Kajjali</i> rose up, white crystals seen around the bottle neck.
5.58 pm	400	White fumes visible on the side of bottle
6.00 pm	400	<i>Kajjali</i> became melt and more soft.
6.20 pm	420	<i>Kajjali</i> raised up from its level and pushed back by using <i>sheet shalaka</i>
6.38 pm	440	White cracks visible over bottle neck
7.15 pm	453	<i>Kajjali</i> starts coming up again and pushed back with <i>sheet shalaka</i> at regular interval
7.25 pm	498	Deposition on <i>sheet shalaka</i> found to be reddish black in color
7.40 pm	500	Copper plate test done [Black circle visible on copper plate]
8.00 pm	520	Dense fumes appeared and bottle neck was cleared by <i>Tapta shalaka</i>
8.35 pm	540	Color of flame seems to be red .
9.00 pm	560	Brick red colored product( <i>Aruna bhaskar sannibha</i> ) appeared, material was seems to be settled down
9.20 pm	580	Bottle mouth corked and kept for self cooling.

Block in the neck of the bottle was observed due to sublimed *Gandhaka* and was cleared by using red hot iron rod frequently otherwise it leads to the breakage of the bottle.

Bottle was corked at night 9.20 pm in the final stage of procedure and the bottle kept for cooling.

On the next day the bottle was tied with using a kerosene dipped thread over the neck portion and was ignited. Once it catches fire it is been wrapped immediately with a wet cloth. Within that time the bottle gets broken into two parts and the final product was collected from both neck & bottom of



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bottle.



1. White fumes appearance 2. Copper coin test –Positive 3. Rising sun (*Aruna bhaskar*) appearance



4. Galastha SPR 5. Talastha SPR 6. Talastha SPR when taken out from bottle  
**Figure 1** Images of observations and final product

### YIELD

- Galastha - 61.7gm
- Talastha -124.1 gm
- Total -185.8gm

### DISCUSSION

*Sameer pannag Ras* is mentioned as *Talastha Kupipakwa Rasayana* (a preparation in which final product is obtained at the bottom of the bottle) classically, hence here after preparation, we obtained final product from both neck and bottom of bottle. We prepared the particular formulation as per the reference of *Rasachandamsu*. The preparation completed by 12 hours.

The temperature pattern was followed as:

- *Mridu agni* ; 6.20 am-12.00 pm
- *Madhyam agni* ; 1.30 pm-7.15 pm
- *Teekshnagni*; 7.25pm -12.15 pm

In the preparation of *kupipakwa rasyanas*, a number of alchemical principles work. As per modern chemistry, *SPR* can be correlated with red sulphide of mercury along with arsenic. Here the *SPR* was prepared without *Manashila* in electrical muffle furnace.

Initially *Kajjali* was prepared using purified *Parad* and *Gandhak*, as it can provide functional and structural stability. The *Kajjali* is further mixed with *Sudha Sankhiya* and *Haritala*, followed by *bhavana* with *Tulsi swaras*. This mixture was placed in *Kachakupi* and kept in electric muffle furnace. The main procedure was started at 6.21 am. The starting temperature was 50°C. There was no specific observations found till the temperature reached at 120°C. Almost after one hour, aroma of *Tulsi swaras* started.

From 11.00 am onwards, white fumes were appeared, due to boiling of arsenic, and at the temperature of 230°C-240°C the colour of fumes turned into yellow along with pungent smell which



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indicates melting of *Gandhak* and the density of fumes increased as time passes.

At 230°C *Kajjali* started melting and its level moves up, along with rising of temperature level. It was pushed down with *Sheeta shalaka* at regular intervals in order to avoid its spilling out. *Kajjali* felt soft and smooth on probing with *sheet shalaka*. At the temperature of 330°C the flame was in blue colour due to formation of SO<sub>2</sub>. Tiny shiny reddish coloured crystals were seen over the inner wall of bottle. With the increase of temperature, the compactness of *Kajjali* was also increased and was felt by *Sheeta shalaka*.

This *Sheeta shalaka pareeksha* reflects significant chemical process at various levels inside the *kachakupi*.

After this, copper-coin test was done by placing copper coin/plate over the mouth of *kachakupi*, for a while. A Black circle was seen over copper plate, which indicates the presence of free mercury particles. Then the furnace was switched off and the bottle was kept for self cooling.

Final product was collected on next day by breaking the bottle using kerosene dipped thread. The product yield was more from the bottom of bottle –*Talastha* [124.1 g] and this *talasth SPR* without *manshila* has been proved for significant anti-inflammatory, anti –histamine and broncho-dialatory properties. *Galastha* product was dark red in color and *Talastha* in shiny black color with green tint and compact in nature. As per Ayurvedic it is recommended in the management of *Tamaka shwasa* [bronchial asthma], *amavata*

[Rheumatoid arthritis], and other neurological diseases.

## CONCLUSION

Sameer pannag rasa was prepared in our departmental as per the reference of *Rasachandamsu*. The final product weighed 185.6 gm. It was dark red in color. Yield obtained from *Talastha & Galasth*.



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