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Preparation of *Panchashara Rasa* - A Herbo-Mineral Formulation

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ABSTRACT

Rasashastra is the branch of *Ayurveda* which deals with number of formulations for various diseases. It involves sophisticated procedures which should be followed meticulously. The concept of *Shodhana* and *Mardana* though seems simple, demands great effort to put through. *Panchashara Rasa* is a herbo-mineral preparation mentioned in *Vajeekaradhikara* of *Bhaishajya Ratnavali*. It contains *Parada*, *Gandhaka* and a herbal drug *Shalmali*. The procedures involved are *Shodhana, Hingulotta Parada Nirmana, Kwatha* preparation, *Bhavana*, *Mardana* and *Parpati* preparation. The current study deals with the conventional preparation of this formulation step by step.

Key words: *Rasashastra procedures, Parpati Nirmana, Panchashara Rasa.*

INTRODUCTION

Rasashastra employs number of processes on a drug to ensure its safety and increase its efficacy. All the procedures involved are finely designed according to the nature and toxic level of the drugs. *Panchashara Rasa*[1] is a herbo-mineral preparation consisting of *Parada*, *Gandhaka* and a herbal drug *Shalmali* (*Bombax ceiba*). It is one of the *Vajeekara Yoga* which is said to increase the *Shukra* of the person for sure. All the 3 ingredients present have *Vrushya* property.

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The procedure involved in *Rasashastra* start from collecting the raw materials till storing the end product. Only the properly followed steps make the drug safe and therapeutically effective.

AIMS AND OBJECTIVES

1. Identification and procurement of genuine quality of raw drugs.
2. Carryout various steps to prepare the final product *Panchashara Rasa*

MATERIALS AND METHODS

Materials

Table 1: Showing contents of *Panchashara Rasa*

SN	Contents	Quantity
1.	*Shuddha Parada*	1 part
2.	*Shuddha Gandhaka*	1 part
3.	*Shalmali Moola Twak Kwatha* (*Bombax ceiba*)	Q.S

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a) **Major raw drugs:** Major raw drugs used in the preparation were purchased from an authenticated source ensuring the *Grahya Lakshanas*.

b) **Herbal drug for *Shodhana* and *Bhavana***

Shalmali Moola was procured from the forest area around Bengaluru.

Nimbu was used as *Shodhana Dravya* and was procured from the local market.

c) **Equipments**

Major equipments - *Khalwa Yantra, Vartula Khalva Yantra, Urdhwa Patana Yantra*, weighing machine, gas stove, pyrometer, pH paper, *Darvi*, chapati maker

Minor equipment's - Knife, utensils, spatula, *Multani Mitti*, cotton cloth, match stick, scissor, juice extractor, filter etc.

Methods

Shuddha Parada and *Shuddha Gandhaka* are given *Bhavana* with *Shalmali Moola Twak Kwatha* for 21 times. Then, *Kajjali* is prepared by mixing *Bhavita Parada* and *Gandhaka.* After proper preparation of *Kajjali* and appearance of all *Kajjali Siddha Lakshanas,* it is heated to melt and then immediately poured and pressed on the plantain leaf to prepare *Parpati*. This *Parpati* is powdered and stored in a clean and sterile container.

Detailed step for preparation of *Panchashara Rasa* are as follows;

- *Shodhana* of *Hingula* - *Bhavana* with *Nimbu Swarasa*.
- Extraction of *Parada* from *Hingula* by *Urdhwa Patana*.
- *Gandhaka Shodhana* - *Galana* in *Godugdha.*
- Preparation of *Shalmali Moola Kwatha*.
- *Bhavana* of *Gandhaka* with *Shalmali Moola Kwath.*
- Mardana of *Parada* with *Shalmali Moola Kwatha*.
- Preparation of *Kajjali*
- Preparation of *Parpati*.

***Hingula Shodhana*[2]**

2 kgs of *Hingula* was taken in a clean *Khalwa Yantra* and powdered. Sufficient quantity of *Nimbu Swarasa* was added, so that it gets totally immersed and *Mardana* was done continuously, with the same pace, till *Hingula* becomes completely dry. Same procedure was repeated for 7 times.

Observations and Results

Table 2: Showing observations during *Hingula Shodhana*

Bhavana	**Quantity of *Nimbu Swarasa***	**Time taken to complete the *Bhavana***	**Observations during *Bhavana***
1st	160 ml	2 hrs	Characteristic nimbu odour was appreciated. Colour changed to bright red. Mardana was taking effort to perform.
2nd	145 ml	1½ hrs	Quantity of nimbu swarasa required was reduced. Time taken to complete *Bhavana* was reduced. Mardana was smoothly carried out as compared to previous one.
3rd	120 ml	1½ hrs	Same as above
4th	100ml	1½ hrs	Same as above
5th	90 ml	1½ hrs	Same as above
6th	60 ml	1 hr	Same as above
7th	45ml	1 hr	Same as above

Observations

- Raw *Hingula* was solid rock like structure with silvery streaks, which eventually vanished after powdering.

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- Quantity of *Swarasa* required during each *Bhavana* was reduced subsequently.
- pH of *Nimbu Swarasa* was 1.
- *Mardana* was getting smoother after each *Bhavana*.
- Time taken to complete *Bhavana* was reduced subsequently.
- Colour of *Hingula* was bright saffon coloured after adding *Nimbu Swarasa.*
- After 7 times of *Bhavana* colour of *Hingula* turned to bright red.
- Weight gain of 200 g was observed after the procedure.

Hingulotta Parada by *Urdhwa Patana*[3]

Two unequal sized, sturdy and devoid of cracks mud pots were taken. Finely powdered *Shuddha Hingula* was taken and spread inside the lower pot, thinly and evenly. Another bigger pot was taken and kept inversely and the mouths of both the pots were sealed using cotton cloth smeared with *Multani Mitti*. 7 layers of *Sandhi Bandhana* was done. Another bigger pot was taken which was cut half from lower end, was placed on the upper pot and sealed. This *Urdhwa Patana Yantra* was kept on gas stove following the heating pattern of *Mandagni, Madhyamagni* and *Tivragni*. Cold water with ice was poured in the uppermost half pot for condensation and was replaced every time when it heated up. After *Swanga Sheeta*, the seal of *Multani Mitti* was opened and *Parada* mixed with soot, condensed on the lower part of upper pot was scraped and collected. This *Parada* was filtered through double layer muslin cloth in a glass jar and washed 2-3 times with hot water to get a clear and shiny mercury.

Table 3: Heat pattern followed during *Hingulotta Parada*

Heat pattern	Temperature range
Mandagni	250 to 350°C
Madhyamagni	350 to 550 °C
Tivragni	550 to 750 °C

Table 4: Showing observations of extraction of *Parada* from *Hingula.*

Batch No	*Hingula* taken	*Agni* given	*Parada* extracted	*Parada* extracted in %	Total yield in %
1st	200 gms	9 hrs	100 gms	50%	53.31%
2nd	150 gms	9 hrs	80 gms	53%	
3rd	200 gms	9 hrs	105 gms	52.5%	
4th	200 gms	9 hrs	108 gms	52.5%	
5th	200 gms	9 hrs	115 gms	57.5%	
6th	200 gms	9 hrs	110 gms	55%	
7th	200 gms	9 hrs	104 gms	52%	
8th	150 gms	9 hrs	82 gms	54%	

Observations

- Characteristic odour of *Gandhaka* was appreciated after 2½ hrs.
- During *Madhyamadni* lower portion of the lower part turned red.
- Water on the upper part was quickly getting heated from *Madhyamagni* phase.
- After *Swanga Sheeta* when *Sandhi Bandhana* was removed, *Parada* was seen collected on the lower portion of the upper pot, in the form of globules, mixed with soot.
- Some amount of *Parada* was also found in the lower pot.
- Grey ash was found in the lower part in some of the procedures.
- 4 to 5 times of filtration was required to obtain clear mercury.

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Parada Vishesha Shodhana

804 gms of *Hingulotta Parada* was taken in a clean *Vartula Khalwa Yantra*. 50.25 gms of *Haridra Churna* (1/16th part of *Parada*) was added to it and *Mardana* was done slowly for 36 hrs for 10 days (3-4 hrs per day). After that *Parada* was collected from *Haridra Churna* and filtered through cotton cloth and washed with warm water.

Observations

- *Parada* during *Mardana,* splits into small globules in *Haridra churna*.
- Colour of *Haridra churna* becomes darker (mustard colour) after 1 hr of *Mardana*.
- Loss of 5 g

Gandhaka Shodhana[4]

1 kg *Ashuddha Gandhaka* was powdered in the *Khalva Yantra*. A medium sized mud pot was taken and *Ghrita* was smeared in its inner layer. 1 liter of *Godugdha* was poured in the mud pot and its mouth was tied with the clean muslin cloth. 250 ml of *Ghrita* was taken in a steel vessel and was kept on the gas stove. Powdered *Gandhaka* was then added in the vessel and was allowed to melt. After melting of *Gandhaka*, it was immediately poured in the mud pot through muslin cloth. The muslin cloth was then removed and the *Gandhaka* collected in the milk was collected. *Gandhaka* was then washed with *Ushna Jala* and dried properly. This process was repeated for 7 times.

Observations

- While powdering the *Ashuddha Gandhaka* strange pungent smell was appreciated.
- After *Shodhana, Gandhaka* which was yellow in colour turned to bright yellowish green in colour.
- *Shodhita Gandhaka* collected in the milk was in the form of combined beads.
- *Shuddha Gandhaka* was oily to touch which was reduced after 3 times wash in hot water.
- Pungent smell was absent in *Shuddha Gandhaka*.
- After 7 times of *Shodhana, Gandhaka* appeared smooth as compared to the raw drug sample.

Preparation of *Shalmali Moola Twak Kwatha*[5]

The outer part of the *Shalmali Moola* i.e., *Twak* was removed and dried. Then the *Twak* part was cut and pounded in the *Khalwa Yantra* to make it into coarse powder. 1 part of coarse powder was taken in a stainless-steel vessel to which 8 parts of water was added and was boiled on *Mandagni* till it reduced to 1/8th. Later it was strained to obtain *Kwatha.*

Observations

- Colour of *Shalmali Moola Twak* was orangish-red.
- After drying of *Moola, Twak* was easily removable.
- Cutting the *Moola* was easier than pounding in *Khalwa Yantra.*
- The obtained *Kwatha* was rich maroon is colour, pleasant to look at and a bit sticky in nature.

Gandhaka Bhavana

Shuddha Gandhaka was taken & powdered in a clean *Khalwa Yantra* and *Shalmali Moola Twak Kwatha* was added to it till *Gandhaka* got totally immersed in it. *Mardana* was done until *Gandhaka* was totally dried. This same procedure was repeated for 21 times.

Observations

- The quantity of *Kwatha* required was reduced in subsequent *Bhavanas*.
- Time take for each *Bhavana* was around 1½ to 2 hrs.
- Colour of *Gandhaka* started turning reddish after 17th *Bhavana*.
- Characteristic smell of *Kwatha* was appreciated.

Parada Bhavana

Parada was taken in a porcelain *Khalwa Yantra* and *Shalmali Moola Kwatha* was poured on it until *Parada* got totally dipped. *Mardana* was done slowly for 21 days (4-5 hrs per day).

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Observations

- Quantity of *Kwatha* required for *Mardana* was less and uniform for 21 days i.e., 60 ml
- After pouring of *Kwatha, Parada* appears in pleasant maroon colour.
- During initial few minutes of *Mardana* fine small globules of *Parada* are appreciated which were connected to each other in a beautiful bond like structure.
- After some time of *Mardana, Parada* was in a paste like form.
- *Parada* attains normal consistency once filtered through the cloth.

Preparation of *Kajjali*

Parada and *Gandhaka* were taken in a *Khalwa Yantra* and *Mardana* was done for 80 hours till the mixture turned to black, luster like powder.

Observations

- Within an hour *Gandhaka* started appearing light black coloured, but *Parada* was not yet mixed.
- Characteristic odour of *Shalmali* was appreciated.
- Within 3-4 hours, *Parada* got mixed with *Gandhaka* but small globules of *Parada* were still seen.
- *Kajjali* attained smooth and black colour after 15 hrs of *Mardana*.

Preparation of *Parpati*

- 20 gms of *Kajjali* was taken in a ghee smeared *Darvi* and heated over mild fire.
- It was allowed to melt and was stirred continuously.
- Once the *Kajjali* was melted to a semi solid consistency, it was immediately poured on ghee smeared banana leaf which was kept in a *chapati* maker and covering with another *ghee* smeared banana leaf and this was pressed quickly.
- The prepared *Parpati* was wiped with cloth and powdered.

Observations

- Melting of *Kajjali* was after 30-40 secs and at 109°C.
- Pungent odour was observed while melting of *Kajjali*.
- The prepared *Parpati* was shiny, thin and made a characteristic sound while broken in half.

Hingula Shodhana

Gandhaka Shodhana

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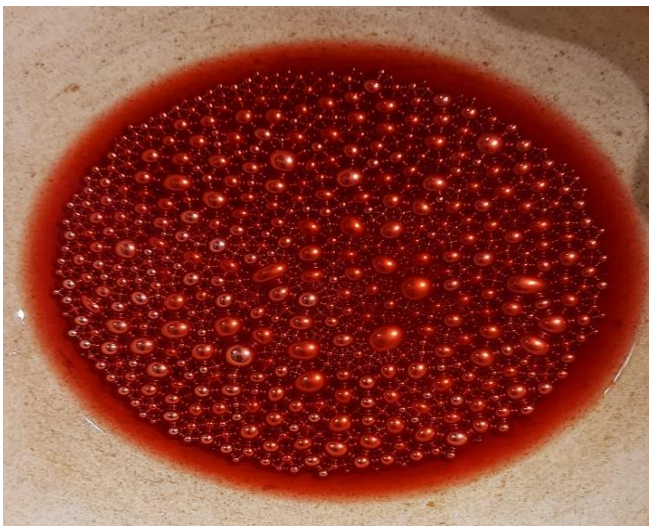
Shalmali Moola

Parada Bhavana* with *Shalmali Kwatha



Preparation* of *Parpati

Panchashara Parpati

DISCUSSION

The natural impurities present in *Hingula* are zinc, copper and antimony. Citric acid, retinols and amino acids present in *Nimbu Swarasa* are natural chelators. Thus, they can chelate these metals by binding to the metal ions the metal ion becomes ion inactive. *Urdhwa Patana* is kind of a sublimation process. There is lot of endothermic changes occurring inside the *Yantra* & purification of *Parada* takes place making it equivalent to *Ashtasamskarita Parada* and devoid of *Kanchukadoshas*. Curcumin present in *Haridra* is a potent inducer of detoxifying enzymes and thereby counters the toxicity induced by mercury and can be used as a therapeutic agent for mercury intoxication. *Shalmali Moola Twak Kwath*a was prepared taking into consideration the rule explained in *Rasa Tarangini* while giving *Bhavana* to any *Dravya*, 8 parts of water is added to the drug and is reduced to 1/8th on *Mandagni*. Practically *Bhavana* to *Parada* cannot be done as it is in the liquid state. Thus, *Mardana* with *Shalmali Kwatha* was carried out for 21 times/days. The spherical bond like structure attained during the *Mardana* is likely due to the high cohesion of mercury molecules to the low adhesion to other materials. The result being high surface tension, which causes a body of liquid to tend to a shape with the least surface area which is a sphere. *Kajjali* trituration leads to decrease in surface tension of mercury molecules which leads to activation of proper bondage between mercury and sulphur particles. The constant, pressured and

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uniform trituration increases the stratification of micro particles of mercury with sulphur so as to increase the compactness and *Sukshmaguna* of *Kajjali. Madhyama Paka* of *Parpati* was done as it is the best for therapeutic use.

CONCLUSION

Panchashara Rasa is basically a *Parpati* form of *Rasayana* and can also be considered as *Sagni*, *Sagandha Murchana* of *Parada*. Dose is 1 *Valla Pramana* and is indicated in *Klaibya*. Following proper steps in the preparation makes the end product perfect with all the *Siddha Lakshana.* The alternative equipment's used instead of ancient tools serves better equable results.

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