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Research Article

DEVELOPMENT OF STANDARD OPERATIVE PROCEDURE FOR *RAS POTTALI* W.R.S. *RASA PRAKASHA SUDHAKARA*

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KEYWORDS: *Rasa pottali, Rasa parpati, Bhudharputa,Tamboola swarasa, Dhatura swarasa*.

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ABSTRACT

Since medieval period, *Rasashastra* has occupied a pivotal position in Ayurvedic system of medicine. In *Rasashastra*, uses of Mercury as a medicine have evolved gradually over centuries. Compared to traditional *Rasa* formulations, many of them which were earlier in practice are not at all used today. Though literature is available on quality aspects of such herbo-mineral formulations in the classical text books, contemporary science is raising concerns at regular intervals on herbo-mineral formulations. Thus, it becomes mandate to develop quality profiles of all formulations that contain metals or minerals in their composition. '*Rasa Pottali*' is one of such preparation that is grouped under '*Murchita Parada Yoga*' in consolidate form which also incorporates the *Pota Bandha* of *Parada*. No other classical references are found for this formulation except for *Rasa Prakasha Sudhakara.* In the present study an attempt has been made to prepare *Rasa pottali* by classical reference and to evaluate its manufacturing process with possible modifications. As per the SOP, the formula mentions that the application of *Dhatura patra swarasa* to be applied on *Pottali* covered with cloth but this seems to be not appropriate for the pharmaceutical preparation and to develop SMP of this preparation. Keeping this in view, the preparation has designed into three different experiments and are carried out to prepare three samples of *Rasa pottali* RP1 (7-7 *Bhavana* with *Tamboola patra swarasa* and *Dhatura parta swarasa*), RP2 (7 *Bhavana with Tamboola patra swarasa* and 7 *Lepana* with *Dhatura patra kalka*) and RP3 (7 *Lepana* with *Tamboola patra kalka* and 7 *Lepana with Dhatura patra kalka*).

INTRODUCTION

Rasashastra can be considered as the backbone of Ayurveda since the success of any medical science depends on the effectiveness of its treatment through quality drug. As far as our science is concerned *Rasaushadhis* plays an important role. Though literature is available on quality aspects of such herbo-mineral formulations in the classical text books; contemporary science is raising concerns at regular intervals on herbo-mineral formulations. Thus, it becomes mandate to develop quality profiles of all formulations that contain metals or minerals in their composition. Many of the currently available formulations are becoming tougher and tougher to produce due to the lack of availability of all the ingredients, typical SOP and SMP's and a long list of other reasons. *Rasa* formulations are categorized under different heading such as *Khalveeya Rasayogas*, *Parpati Kalpana*, *Kupipakva Rasayanas*, and *Pottali Kalpana* etc. Among these *Pottali Kalpana* has unique place in *Rasaushadhis* since it contain metals, mineral and plant materials which were converted into *Pottali* (conical shape) in a compact form. It also has wide therapeutic applications, acts as *Rasayana* and can be used in Ayurvedic emergency and critical care. Exploring the literature of *Rasashastra, Rasa prakasha Sudhakara a* classical *Rasa* text authored by *Acharya Yashodhara*, explains about *'Rasapottali'*

in the chapter three dedicated to *Parada Bhasma*. *Rasapottali* is an unexplored formulation which had a unique method of preparation where *Paka* of *Pottali* is done in *Bhudharaputa* unlike in majority of *Pottali* preparation where *Paka* in sulphur bath is carried out. *Rasapottali* is an important pharmaceutical preparation of *Rasashastra*. Moreover, the final drug lacks SOP and SMP including established process of standardization and quality standards. In the present study an attempt has been made to prepare *Rasa pottali* by classical reference and to evaluate its manufacturing process with possible modifications.

MATERIAL AND METHODS

Material

A) Major Raw materials used are *Parada* and *Gandhaka*

B) Associated drugs

1. *Bhavana Dravya- Tamboola* and *Dhatura*
2. *Shodhana Dravya* of *Parada- Sudha, Lashuna* and *Saindhava*
3. *Shodhana Dravya* of *Gandhaka- Goghrita and Godugdha*

Methods

In the present study three different samples of *Rasa pottali* were prepared with minor variations and named as RP1, RP2, RP3. The difference in the preparation of three samples is also mentioned in the following table:

Table 1: Showing Samples of *Rasa pottali* (RP1, RP2, RP3)

S. No	Sample	Ingredients	Method of preparation
1	RP1	1. *Shudha Parada* 2. *Shudha Gandhaka* 3. *Tamboolapatraswarasa* 4. *Dhaturapatraswarasa*	1. Preparation of *Samagunakajjali* 2. Preparation of *Rasa Parpati* 3. Powdering of *Rasa Parpati* 4. *Bhavana*with *Tamboolapatraswarasa* (7 times) 5. *Bhavana* with *Dhaturapatraswarasa* (7 times) 6. Shaping in to cylindrical shape and dried 7. *Paka* was done in *Bhudharaputa* method
2	RP2	1. *Shudha Parada* 2. *Shudha Gandhaka* 3. *Tamboolapatraswarasa* 4. *Dhaturapatra Kalka*	1. Preparation of *Samagunakajjali* 2. Preparation of *Rasa Parpati* 3. Powdering of *Rasa Parpati* 4. *Bhavana* with *Tamboolapatraswarasa* (7 times) 5. *Lepan* with *Dhaturapatrakalka* (7 times) 6. Shaping in to *Puga* shape and dried 7. *Paka*was done in *Bhudharaputa* method
3	RP3	1. *Shudha Parada* 2. *Shudha Gandhaka* 3. *Tamboolapatra Kalka* 4. *Dhaturapatra Kalka*	1. Preparation of *Samagunakajjali* 2. Preparation of *Rasa Parpati* 3. Powdering of *Rasa Parpati* 4. *Lepan* with *Tamboolapatra Kalka* (7 times) 5. *Lepan* with *Dhaturapatra Kalka* (7 times) 6. Shaped in to Rectangular shape and dried 7. *Paka* was done in *Bhudharaputa* method

The whole process of *Rasa Pottali* preparation can be divided into the following steps:

1. *Parada Shodhana*
2. *Gandhaka Shodhana*
3. Preparation of *Kajjali*
4. Preparation of *Parpati*
5. Preparation of *Pottali*

1) *Parada Shodhana*[1]

Samanya Shodhana of *Parada* was carried out as per *RasaTarangini*. 1000gm of *Ashudhha Parada* was taken and *Mardana* was done with equal quantity of *Sudha Choorna* and it was continued for 24 hours till the colour of *Sudha* transformed from white to grey. Then the mixture was washed with hot water. The collected *Parada* was again subjected to *Shodhana* with *Lashuna* in equal quantity and half quantity of *Saindhava. Mardana* was continued for 7 hours. It was stopped when colour of *Kalka* had completely changed to black. *Parada* was again washed with hot water and filtered through a clean sterile cotton cloth.

2) *Gandhaka Shodhana*[2]

Gandhaka Shodhana was done in two batches as per reference of *Rasa Ratna Samuchya* with minor modification. 3 litre quantity of milk was boiled in a wide stainless steel vessel. The vessel was covered with ghee smeared clean cotton cloth. 500gm of fine powder of *Gandhaka* was spread uniformly on the cloth. Then another stainless steel vessel of equal dimension was kept in inverted position over the first vessel. The junctions were sealed with cotton cloth smeared with mud. The prepared apparatus was subjected for fire for a period of 30 minutes by using broken pieces of 6 cow dung cakes and allowed for self-cooling. Then *Gandhaka* was washed with hot water.

3) Preparation of *Kajjali*[3]

Preparation of *Kajjali* was carried out as per *Rasa Tarangini*. 500gm *Shodhita Parada* and 500gm *Shodhita Gandhaka* were taken in an equal quantity into a *Khalva yantra* and was triturated for 4 hours per day. The same was continued till the whole mixture become Jet black in colour, soft, lustreless and ensured to fulfil all the criteria of *Kajjali.* Total 24 hours was consumed for trituration.

4) Preparation of *Parpati*[4]

Parpati preparation was carried out in 13 batches as per the reference of *Chakradatta* 50gm of prepared *Kajjali* was taken in a Iron ladle smeared with ghee and was placed on the gas at moderate flame to melt the *Kajjali,* till the mixture turned into semisolid form. When the *Kajjali* reached semisolid stage, it was immediately poured over the smooth platform, followed by gentle compression by using banana leaf *Pottali* and allowed to self cool. The obtained *Parpati* which was flat in shape was collected as *Rasaparpati* and cleaned with the cotton cloth.

5) Preparation of *Pottali*

Rasa pottali was prepared in three samples RP1, RP2, RP3 with minor changes.

Preparation of *Pottali* (RP1)[5]

Preparation of sample RP1was carried out as per *Rasaprakash Sudhakar.* 200gm powdered *Rasa parpati* was taken in *Khalva yantra* and triturated with 80ml of *Tamboola swarasa* and levigation was carried out for three hours until the whole *Swarasa* dried up and the same process was carried out for six times with the required quantity of *Swaras*. After seven *Bhavana* of *Tamboola swarasa, Bhavana* of *Dhatura patra swarasa* was given seven times and the whole material was shaped into Cylindrical form and dried, weighed and labelled as *Rasa pottali* (RP1) and stored in a glass bottle for further *Puta.* The dried cylindrical shaped *Rasa pottali* (RP1) was kept in a pit (24cm l x 24cm b x 12cm h) half filled with sand and was covered with sand upto its surface and the pit was left untouched for 36 hours. After completion of 36 hours, fire was set on the top by using cow dung cakes and coal and temperature was maintained for 36 hours. Finally the operation was allowed for self-cooling. Next day the *Pottali* was removed from the pit and cleaned with cotton cloth and weighed and stored in glass bottle for further analysis.

Preparation of *Pottali* (RP2)

The sample RP2 was prepared by the above mentioned process as in RP1 but after *Bhavana* of *Tamboola swarasa*, external application of *Dhatura Kalka lepa* was done with utmost care with the drug. Even though term *Dhatura patra swarasa* was mentioned in the quotation, *Kalka* was found more suitable for application of *Lepa* (coating) over *Pottali*, so the same was used for the purpose.

Preparation of *Pottali* (RP3)

The sample RP3 was prepared by the same above mentioned process as in RP1 and RP2 but with minor change that instead of *Bhavana*, *Lepan* of *Tamboola* and *Dhatura patra kalka* (external application) was done with utmost care.

RESULTS

Table 2: Showing result of *Samanya Shodhana* of *Parada*

Step wise result of *Parada shodhana*	**Results**
Total *Parada* obtained (after separation from *Sudha*)	880 g
Total loss of *Parada*	120 g
Percentage loss	12%
Total *Parada* obtained (after separation from *Lahsuna, Saindhavakalka*)	853 g
Total loss of *Parada*	27 g
Percentage loss	3.16 %

Table 3: Showing final yield after *Samanya Shodhana* of *Parada*

Initial weight of *Parada*	Final weight of *Parada*	Loss of *Parada*	% Loss of *Parada*
1000 g	853 g	147 g	14.7 %

Table 4: Showing final yield after *Gandhaka Shodhana*

Batch	Initial weight of *Gandhaka*	Final weight of *Gandhaka*	Loss of *Gandhaka*	% Loss of *Gandhaka*
Total	1000 g	964 g	36 g	3.6 %

Table 5: Showing Results of *Kajjali* reparation

S.No.	Parameters of *Kajjali*	Results
1.	Total Material taken	1000 g
2.	Final weight of prepared *Kajjali*	980 g
3.	Loss of weight	20 g
4.	Percentage loss	2 %

Table 6: Result obtained during preparation of *Rasa Parpati*

S.No.	Date	Batch	Initial quantity	Duration	Temperature at the time of melting	Quantity of *Parpati* obtained
1	10.07.019	Batch 1	50 g	4.08 min	147°c	50.2 g
2	10.07.019	Batch 2	50 g	5. 02 min	148°c	50.0 g
3	10.07.019	Batch 3	50 g	6.21 min	152°c	53.0 g
4	10.07.019	Batch 4	50 g	5. 00 min	157°c	52.3 g
5	10.07.019	Batch 5	50 g	3.52 min	155°c	52.0 g
6	10.07.019	Batch 6	50 g	3.17 min	147°c	48.9 g
7	10.07.019	Batch 7	50 g	5.00 min	160°c	50. 0 g
8	11.07.019	Batch 8	50 g	6.21 min	165°c	52. 0 g
9	11.07.019	Batch 9	50g	11.00 min	164°c	39.5 g
10	11.07.019	Batch 10	50g	6.00 min	163°c	54.3 g
11	11.07.019	Batch 11	50g	4. 00 min	170°c	52.5 g
12	11.07.019	Batch 12	50 g	5.09 min	162°c	49.7 g
13	11.07.019	Batch 13	50g	6.00 min	190°c	52.2 g

Table 7: Showing Quantity of *Bhavana* drugs utilized during each *Bhavana* of preparation of *Rasa Pottali* (RP1)

No. of *Bhavana*	Quantity of *Tamboola* leaves *Swarasa* used	No. of hrs. of *Mardana*	No. of *Bhavana*	Quantity of *Dhatura* leaves *Swarasa* used	No. of hrs. of *Mardana*
1	80 ml	3 hrs.	8	80 ml	3 hrs.
2	80 ml	3 hrs.	9	60 ml	3 hrs.
3	80 ml	3 hrs.	10	50 ml	3 hrs.
4	70 ml	3 hrs.	11	50 ml	3 hrs.
5	60 ml	2. 30 hrs.	12	40 ml	3 hrs.
6	60 ml	2 hrs.	13	40 ml	3 hrs.
7	60 ml	2 hrs.	14	40 ml	3 hrs.

Table 8: Showing Cylindrical shaped *Rasa pottali* (RP1) after *Bhavana*

Initial weight of *Parpati* powder	Final weight after 14 *Bhavana*	No. of *Pottali* prepared	Average wt. of *Pottali*
200 g	220.3 g	11	20 g

Note: Out of 11 prepared *Rasa pottali (RP1)* samples, in the present study only 2 samples were subjected for *Puta paka*.

Table 9: Showing Temperature pattern during *Paka* of *Pottali* (RP1)

S.No	Date	Time	Temperature in ^{0}C
1.	25/11/019	9.00 am	370^{0}C
2.	”	12.00 noon	383^{0}C
3.	”	3.00 pm	368^0 C
4.	”	6.00 pm	380^0 C
5.	”	9.00 pm	398^0 C
6.	26/11/019	12.00 am	353^0 C
7.	”	3.00 am	356^0 C
8.	”	6.00 am	322^0 C
9.	”	9.00 am	483^0 C
10.	”	12.00 noon	492^0 C
11.	”	3.00 pm	378^0 C
12.	”	6.00 pm	497^0 C
13.	Heating is stopped and left for self - cooling		

Table 10: Result obtained during *Paka* of *Rasa pottali* (RP1)

S.No.	*Pottali*	Initial weight	Final weight	Appearance	Colour
1.	RP1	23.3 g	22.3 g	Smooth Shiny Surface	Bright Black
2.	RP1	21.6 g	20.8 g		

Table 11: Quantity of *Bhavana* and *Lepa* drugs utilized during each *Bhavana* and *Lepa* of *Rasa pottali* (RP2)

No. of *Bhavana*	Quantity of *Tamboola* leaves *Swarasa* used for *Bhavana*	No. of hrs. of *Mardana*	No. of *Dhatura* leaves *Lepa*	Quantity of *Dhatura* leaves (Avg.) *Kalk* used for *Lepa*
1 *Bhavana*	80 ml	3 hrs.	1 *Lepa*	90 g
2 *Bhavana*	80 ml	3 hrs.	2 *Lepa*	90 g
3 *Bhavana*	60 ml	3 hrs.	3 *Lepa*	90 g
4 *Bhavana*	65 ml	2.30 hrs.	4 *Lepa*	90 g
5 *Bhavana*	60 ml	2.30 hrs.	5 *Lepa*	90 g
6 *Bhavana*	60 ml	3 hrs.	6 *Lepa*	90 g
7 *Bhavana*	55 ml	2.30 hrs.	7 *Lepa*	90 g

Table 12: Showing results of *Rasa pottali* (RP2) preparation

Initial weight of *Parpati* powder	Final weight of mixture after 7 *Bhavana*	No. of *Pottali* prepared	Average wt. of *Pottali* after 7 *Bhavana*	Final weight of *Pottali* after *lepa*	Average wt. of Dried *Pottali* after 7 *lepa*
200 g	211 g	11	19 g	246 g	22 g

Note: Out of 11 prepared *Rasa pottali* (RP2*)* samples, in the present study 2 samples were subjected for *Puta paka*.

Table 13: Showing Temperature pattern during *Paka* of *Pottali* (RP2)

S.No	Date	Time	Temperature in ^{0}C
1.	25/11/019	9.00 am	358^{0}c
2.	”	12.00 noon	378^{0}c
3.	”	3.00pm	410^{0}c
4.	”	6.00pm	389^{0}c
5.	”	9.00pm	425^{0}c
6.	26/11/019	12.00 am	368^{0}c
7.	”	3.00 am	367^{0}c

8.	”	6.00 am	498^{0}C
9.	”	9.00 am	390^{0}c
10.	”	12.00 noon	433^{0}c
11.	”	3.00 pm	380^{0}c
12.	”	6.00 pm	510^{0}c
13.	Heating is stopped and left for self -cooling.		

Table 14: Result obtained during *Paka* of *Rasa pottali* (RP2)

S.No	*Pottali*	Initial weight	Final weight after *Paka*	Final weight after removing *Lepa* covering	Appearance	Colour
1	RP2	24.7 g	24.2 g	20. g	Rough surface	Dull Black
2	RP2	22.5 g	22.1 g	18.4 g		

Table 15: Quantity of *Tambool* and *Dhatura patra kalka* used for *Rasa pottali* (RP3) preparation

No. of *Lepa*	Quantity of *Tambool* leaves (Avg.) *Kalka* used for *Lepa*	No. of *Lepa*	Quantity of *Dhatura* leaves (Avg.) *Kalka* used for *Lepa*
1 *Lepa*	90 g	1 *Lepa*	90 g
2 *Lepa*	90 g	2 *Lepa*	90 g
3 *Lepa*	90 g	3 *Lepa*	90 g
4 *Lepa*	90 g	4 *Lepa*	90 g
5 *Lepa*	90 g	5 *Lepa*	90 g
6 *Lepa*	90 g	6 *Lepa*	90 g
7 *Lepa*	90 g	7 *Lepa*	90 g

Table 16: Result obtained during preparation of *Rasa pottali* (RP3)

Initial weight of *Parpati* powder	Final weight after trituration with both *swarasa*	*Swarasa* used	No. of *Pottali* prepared	Average wt. of *Pottali* on drying	Final weight after 14 *lepa*	Average wt. of *Pottali* after 14 *Lepa*
200 g	203 g	80 ml	8	25 g	275 g	34

Note: Out of 8 prepared *Rasa pottali (RP3)*samples, only 2 samples were subjected for *Puta paka*

Table 17: Showing Temperature pattern during *Paka* of *Pottali* (RP3)

S.No	Date	Time	Temperature in ^{0}C
1.	2/12/019	9.00 am	365^{0}c
2.	”	12.00pm	389^{0}c
3.	”	3.00pm	358^{0}c
4.	”	6.00pm	383^{0}c
5.	”	9.00pm	410^{0}c
6.	3/12/019	12.00am	376^{0}c
7.	”	3.00am	370^{0}c
8.	”	6.00am	357^{0}c
9.	”	9.00am	486^{0}c
10.	”	12.00pm	492^{0}c
11.	”	3.00 pm	495^{0}c
12.	”	6.00 pm	520^{0}c
13.	Heating was stopped and left for self -cooling.		

Table18: Result obtained during *Paka* of *Pottali* (RP3)

S.No	*Pottali*	Initial weight	Final weight after *Paka*	Final weight after Removing *lepa* covering	Appearance	Colour
1	RP3	35.4 g	33.5 g	24.3 g	Rough Surface Hard stone Like	Dull Black
2	RP3	33.9 g	31.9 g	22.9 g		

DISCUSSION

In preparation of *Rasa Pottali* the method of *Parada Shodhana* was selected on the basis of easy availability of *Shodhana* drugs which contain *Sudha, Lashuna, Saindhava lavana* as *Shodhan* drugs. While triturating *Parada* with *Sudha*. It was observed that mixture was changed to greyish powder. It may be due to redox reaction between them. In which oxygen of *Sudha* (CaO) might have oxidised the impurities of *Parada*. During *Shodhan* process unslaked lime was used which has the tendency of absorbing moisture from the atmosphere and it might be the reason for *Sudha* to get heavier during process on continuous trituration. This property also results in exothermic reaction and production of heat which might have helped in separating impurities from *Parada*. Hot water used has also helped in avoiding sticking of *Parada*. *Parada* being metal is heavier in nature. So get settle down thus breaking water surface tension, thus helping in easy separation from *Sudha*. It was observed that *Parada* had a weight loss of 12% during this process, it may be due to *Jalagati* and *Malagati*. Procured *Parada* was then subjected for *Shodhana* with *Lashuna* and *Saindhava lavana*. As both are *Ushna, Teekshna* and *Vishada i*n nature, properties of both these drugs would have helped in minimising the toxicity of *Parada.* Also *Lashuna* is best antidote for heavy metal poisoning. As *Lahsuna* contains allin and allicin - organosulphur, it might have reacted with *Parada* during continuous trituration with it. Which may account for variation in colour of *Lashuna Kalka* from light green to grey and from grey to black. Which can be interpretated as transformation of impurities from *Parada* to other media. The weight loss during this step was 3.16%. This may be due to *Malagati* and handling loss. Obtained *Parada* was bright and shiny white in colour after purification procedure. It may be due to removal of impurities in the form of slag with lime.

The conventional method of *Shodhana* of *Gandhaka* is melting it in *Ghrita* and followed by *Dhalan* in cow's milk. In this process, even after washing with warm water *Ghrita* cannot be completely washed off from the *Gandhaka.* As *Gandhaka* is highly *Pitta vardhaka* therefore milk is used to counter balance its *Pitta rujakara* effect as milk is *Vata- Pitta shamak*. Both Milk and Ghee are *Madhura rasa* and *Jeevaniya dravyas.* Purification with these drugs might have removed *Vishadosha* and impregnated *Rasayana* property to *Gandhaka.* During the process Weight loss was 3.6% after the process. This may be due to floating away of small particles of *Gandhaka* with water during washing and due to handling loss. After *Shodhana* colour of *Gandhaka* was changed and it converted to granules.

Kajjali was the base material for further preparation. *Samguna Kajjali* was prepared by taking equal quantity of *Shuddha Parada* and *Shuddha Gandhaka.* It took 24 hrs to prepare proper *Kajjali* by *Mardana samskara.* Trituration is stopped only after performing confirmatory test of *Kajjali* such as shining indicating no free Mercury, *Laghuta, Sukshmata* and *Rekhapurnata* indicating its fineness. Weight loss in the material was 2%. This may be due to spilling of fine *Kajjali,* adherence to *Khalva yantra* and in performing confirmatory test of *Kajjali.* After the process Jet black colour of *Kajjali* was obtained.

In the preparation of *Parpati* total quantity of *Kajjali* used was 650gm and the obtained *Parpati* was 656.6gm. The net gain was 6.5gm. This may be due to adhered ghee with *Parpati* or presence of Chlorophyll.

Tamboola was used as a *Bhavana dravya* in the preparation of *Rasa pottali*. Thus it helps in reduction of particle size and addition of its active principles to the drug during the process. As it helps in tight bonding of the ingredients through suitable physico- chemical changes. According to *Rasa Tarangini*, It is also used for *Shodhana* purpose of *Parada,* thus minimizing its toxic effect. It has specific properties to increase potency and enhance the therapeutic value of the formulation. In the present study *Tamboola* leaf juice was used for the *Bhavana* purpose of *Rasapottali*.

Dhatura leaves were used as a second *Bhavana dravya* in the preparation of *Rasa pottali,* thus transforming the material to finer state, helping the ingredient in stronger bonding through various physico-chemical changes. As continuous trituration result in generation of heat, which could be the reason for chemical reaction occurring between the ingredients. In the present study *Dhatura* leaf juice was used for the *Bhavana* purpose of *Rasapottali.*

The pharmaceutical preparation of *Rasapottali* has prepared in accordance with *Rasaprakasha Sudhakara* with slight modification to develop SOP and SMP. The designed formula was as under:

Increase in weight in *Parpati* powder was observed after *Bhavana* process in RP1, RP2 and RP3. This may be due to added solid contents of *Tamboola and Dhatura patra swaras.* Increase in weight after application of *Lepa* was also observed in RP2 and RP3 this may be due to adhered coating

of *Kalka* of *Dhatura lepa.* After final *Paka* of *Pottali* there was slight decrease in the weight of *Pottali* probably the organic contents may have burned off due to the involvement of high temperature. Though the shape of *Pottali* is mentioned *Pugakara/ Shikarakara* (conical) shape, it was decided to make *pottali* in other shapes like cylindrical and rectangular. Since *Pottali* is a dosage form which is administered to patients after rubbing it over a stone and in such a mode of administration the shape of *Pottali* will have a definite role. Ancient scholars of *Rasashastra* may have found the conical shape of *Pottali* more suitable since conical shaped objects can be easily hold with hands while rubbing without slipping away. In this study it was decided to check whether *Pottali* prepared in other shapes also could held with ease. But when three different shaped *Pottali* were tested for their easiness to hold between hands to get a sufficient grip to rub it over a surface it was found that conical form which is already mentioned in the classics is best shape which can be given to a *Pottali.*

CONCLUSION

As per the SOP, the formula mentions that the application of *Dhatura patra swarasa* to be applied on *Pottali* covered with cloth but this seems to be not appropriate for the Pharmaceutical preparation and to develop SMP of this preparation. Keeping this in view, the preparation has designed into three different experiments and are carried out to prepare three samples of *Rasapottali* RP1 (7-7 *Bhavana* with *Tamboola patra swarasa* and *Dhatura parta swarasa)*, RP2 (7 *Bhavana* with *Tamboola patra swarasa* and 7 *Lepana* with *Dhatura patra kalka*) and RP3 (7 *Lepana* with *Tamboola patra kalka* and 7 *Lepana with Dhatura patra kalka*). The application of *Kalka* was done to the *Apakwa pottali* but not on the cloth. Temperature ranging from 322^0c-520^0c and duration of 36 hour was required for the *Paka* of three samples of *Rasapottali* in *Bhudhara puta* method. Above parameters can be considered as in house standard parameters for standardization of *Rasa pottali.* However, it is suggested that there is requirement of safety profile and evidence for therapeutic efficacy studies to be carried out for this formulation for purpose of clinical use.

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