



## PHARMACEUTICAL PREPARATION OF CLASSICAL AND MODIFIED FORMULATIONS OF *RASONADI VATI*.

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### ABSTRACT

Ayurveda is the science of life which deals with health and wellness of the society. The holistic approach of Ayurveda helps to cure the diseases by acting on multiple systems. Ayurveda is divided into eight branches which can further be considered in "*Trisutra*"-i.e. *Hetu*, *Linga* and *Aushadha* which are the base for treating every disease.<sup>[1]</sup> *Aushadha* is also known as *Bhaishajya* and plays an important role in treatment of diseases in all the branches of *Ayurveda*. The natural form of any *Aushadi* is not feasible in treatment. So, it should be modified by *Kalpana*. The branch of Ayurveda which prepares and modifies the *Aushadi* is known as *Bhaishajya Kalpana*. There are five basic

*kalpanas*.<sup>[2]</sup> To meet the need of time and to fulfil the requirements like long shelf life, palatability, low dose, quick action, easy dispensing and handling, several *upkalpanas* were discovered, like *Vatikalpana*, *Avaleha*, *Sandhan*, *Sneha*, *arka Kalpana* etc. Among these, *Vatikalpana* is important and selected due to easy administration, dose management, higher shelf life period and palatability. *Ajeerna* and *Visuchika* are mainly diseases of digestive system. It may occur due to irregular diet and bowel habit, as well as it may occur due to *krimi* (microbes) when ingested, i.e. food and water borne infections. One such most popular herbal drug "*Rasonadi Vati*" is extensively used for the management of *Ajeerna*, *Visuchika*.

**KEYWORDS:** *Trisutra*, Holistic, *Krimi*, *Kalpana*, *Rasonadi Vati*.

### AIMS AND OBJECTIVES

- 1) To prepare *Rasonadi Vati* & laid down the SOP's & SMPs.
- 2) First sample (RV1) is prepared as per reference *Vaidya Jivanam* by *Lolimbraj*.

3) Second sample (RV2) is prepared as per reference *Brihat Nighantu Ratnakar*. Here *Gandhaka* is absent but *Sauvarchala lavana* is used.

4) Third sample (RV3) is prepared by modification. Here *Jeeraka* in sample RV1 is replaced by *Yavani*.

## MATERIALS AND METHODS

**Materials:** All the raw material will be procured from the pharmacy Dept. of *Rasashastra* and *Bhaishajya Kalpana*, National institute of Ayurveda, Jaipur and at source available.

### Methods

**Sample 1 (RV1)** : *Rasonadi vati* (Ref. *Vaidya Jeevan* 4/13)

**Sample 2 (RV2)** : *Rasonadi vati* [Ref. *Brihat Nighantu Ratnakar* (Ajirnaa)]

**Sample 3 (RV3)** : Modified sample

**Table No.1** Showing ingredients of all three samples of *Rasonadi Vati*.

Sr.no.	Ingredients	RV1	RV2	RV3
1	<i>Rasona</i>	+	+	+
2	<i>Jeeraka</i>	+	+	-
3	<i>Shunthi</i>	+	+	+
4	<i>Maricha</i>	+	+	+
5	<i>Pippali</i>	+	+	+
6	<i>Hingu</i>	+	+	+
7	<i>Shuddha Gandhaka</i>	+	-	+
8	<i>Saindhava Lavana</i>	+	+	+
9	<i>Sauvarchala Lavana</i>	-	+	-
10	<i>Yavani</i>	-	-	+

**Table No.2:** showing Ingredients of *Rasonadi Vati* samples with its Name, Parts used and ratio.

Sr.No.	Ingredient	Parts used	Ratio
1	<i>Rasona</i>	Cloves	1
2	<i>Jeeraka</i>	Ripe Fruit	1
3	<i>Shunthi</i>	Dried Rhizome	1
4	<i>Maricha</i>	Dried Fruit	1
5	<i>Pippali</i>	Dried Fruit	1
6	<i>Hingu</i>	Gum-Resin	1
7	<i>Shuddha Gandhaka</i>	<i>Shodhita</i> (powder)	1
8	<i>Saindhava Lavana</i>	Powder Form	1
9	<i>Sauvarchala Lavana</i>	Powder Form	1
10	<i>Yavani</i>	Dried Fruit	1
11	<i>Nimbu</i>	Ripe Fruit	Q.S. For <i>Bhavana</i>

## A] PHARMACEUTICAL PROCESS

### 1. Preparation of *Swarasa* for *Bhavana*

**Swarasa** - The liquid juice of freshly macerated plant material obtained by pressing through a cloth is called *Swarasa*.

*Swarasa* is the first member of the group of “*Panchavidha Kashaya Kalpana*”. It is the Extract of juice made from a drug pressed by a *Yantra* and it is the best dosage form in the group for acute diseased conditions.

#### *Nimbu swarasa Nirmana* (Extraction of Lemon juice)

**Principle:** *Nishpidana* (squeezing).

**Equipments:** Knife, lemon juice extractor, clothes, S.S.vessel (1), measuring cylinder, weighing machine.

**Material:** *Nimbu* (Lemon).

**Procedure:** Lemons were washed with potable water. It was then cut into two halves, placed in lemon juice extractor and compressed to collect lemon juice in SS vessel.

Juice was then filtered to remove seeds and used for levigation.

#### Precautions

- 1) Cotton cloth should be clean.
- 2) Hygienic care was maintained throughout the procedure.
- 3) Seeds were removed before compression in lemon juice extractor.

**Note:** *Nimbu Swarasa* was extracted freshly each time during levigation.

### 2. Preparation of Three samples of *Rasonadi Vati*- The three samples are prepared

#### Standard Operating Procedure (SOP) of *Rasonadi Vati*

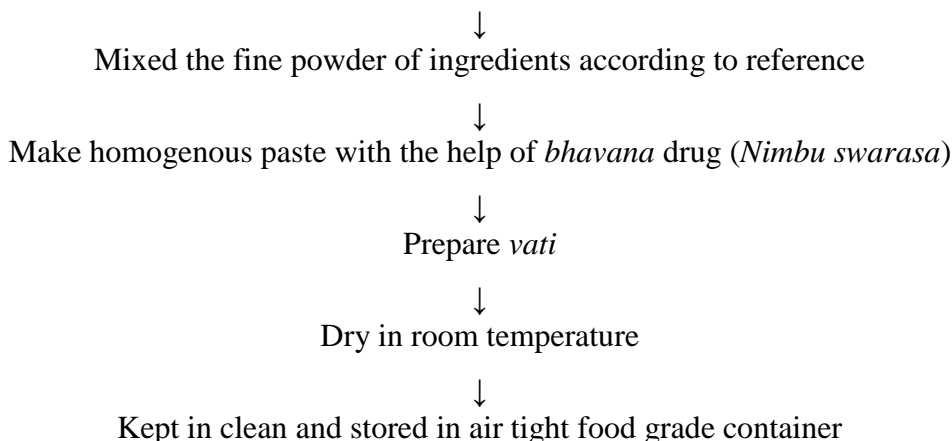
Procure authentic ingredients of *Rasonadi vati*

↓

Cleaned each ingredient separately

↓

Raw drugs make into powder



### A] EXPERIMENT NO.1 (Preparation of Sample RV1)

**Date of commencement** : 02-07-2015

**Date of completion** : 11-07-2015

**Ingredients:-** *Rasona*, *Jeeraka*, *Shunthi*, *Maricha*, *Pippali*, *Hingu*, *Saindhava lavana*, *Shuddha Gandhaka*- Each 50 gms

**Bhavana Dravya:-** *Nimbu swarasa*- 380 ml.

#### Procedure

- 1) At first 50 g of *Rasona* cloves were taken and grinded in mixer grinder for making its *kalka*.
- 2) Then *Rasona kalka* taken in *Khalva yantra* and 50 g of *Hingu* is added in it.
- 3) Both are mixed properly to make a paste of *Rasona* and *Hingu*.
- 4) Then all *churna* from No.3-8 is taken into medium sized *Khalva yantra*.
- 5) Then *Nimbu swarasa* is added in above mixture gradually and levigated.
- 6) The whole mixture is levigated until it get dried.
- 7) Again two *Bhavana* given by *Nimbu swarasa* to whole mixture.
- 8) Overall three *Bhavana* given to whole mixture.
- 9) Each time for new *Bhavana* fresh *Nimbu swarasa* was extracted and used.
- 10) When whole mixture came in to the form that it can be easily rolled in between two fingers,  
*Vati* prepared manually.
- 11) It was then dried, weighed, packaged and stored.

Table No.3 showing details of *Bhavana*.

Sr.No	<i>Bhavana dravya</i>	<i>Bhavana</i> No.	Amt. of liquid	Date	Increase in Wt. of mixture	Colours of mixture after <i>bhavana</i>	Hrs. Req.
1	<i>Nimbu Swarasa</i>	1 <sup>st</sup>	180 ml	02-07-2015	15 g	Brown	9 hrs
2	<i>Nimbu Swarasa</i>	2 <sup>nd</sup>	150 ml	06-07-2015	12g	Brown	8 hrs
3	<i>Nimbu Swarasa</i>	3 <sup>rd</sup>	120 ml	09-07-2015	10 g	Dark brown	6 hrs
	<b>Total</b>		<b>450 ml</b>		<b>37 g</b>		23 hrs

**OBSERVATIONS**

- Amount required of *Nimbu swarasa* for levigation of whole mixture was more for 1<sup>st</sup> *Bhavana*.
- While mixing *Hingu* and *Rasona*, a characteristic smell felt.
- Colour of mixture also changed slightly after 3<sup>rd</sup> *Bhavana*.

**Precautions**

- Care was taken to keep uniformity in weight of handmade *vati*.
- As the procedure took long time, *khalva yantra* was properly covered daily to prevent contamination.

**B) EXPERIMENT NO.2 (Preparation of sample RV2)**

**Date of commencement** : 05-08-2015

**Date of completion** : 16-08-2015

**Ingredients:-***Rasona, Jeeraka, Shunthi, Maricha, Pippali, Hingu, Saindhava lavana, Sauvarchala lavana- Each 50 gms*

**Bhavana Dravya:-** *Nimbu swarasa- 380 ml.*

**Procedure**

1. At first 50 g of *Rasona* cloves were taken and grinded in mixer grinder for making its *kalka*.
2. Then *Rasona kalka* taken in *Khalva yantra* and 50 g of *Hingu* is added in it.
3. Both are mixed properly to make a paste of *Rasona* and *Hingu*.
4. Then all *churna* from No.3-8 is taken into medium sized *Khalva yantra*.
5. Then *Nimbu swarasa* is added in above mixture gradually and levigated.
6. The whole mixture is levigated until it get dried.
7. Again two (2) *Bhavana* given by *Nimbu swarasa* to whole mixture.

8. Overall three (3) *Bhavana* given to whole mixture.
9. Each time for new *Bhavana* fresh *Nimbu swarasa* was extracted and used.
10. When whole mixture came in to the form that it can be easily rolled in between two fingers,  
*Vati* prepared manually.
11. It was then dried, weighed, packaged and stored.

**Table No.4: showing details of ingredients and its amount used.**

Sr.no.	<i>Bhavana dravya</i>	<i>Bhavana</i> No.	Amt. of liquid	Date	Increase in Wt. of mixture	Colour of mixture after <i>bhavana</i>	Hrs. Req.
1	<i>Nimbu Swarasa</i>	1 <sup>st</sup>	150 ml	05-08-2015	12 g	Brown	12 hr
2	<i>Nimbu Swarasa</i>	2 <sup>nd</sup>	125 ml	10-08-2015	10 g	Brown	8 hr
3	<i>Nimbu Swarasa</i>	3 <sup>rd</sup>	105 ml	14-08-2015	9 g	Dark brown	6 hr
	<b>Total</b>		<b>380 ml</b>		<b>31 g</b>		26 hr

**OBSERVATIONS**

- Amount required of *Nimbu swarasa* for levigation of whole mixture was more for 1<sup>st</sup> *Bhavana*.
- While mixing *Hingu* and *Rasona*, a characteristic smell felt.
- Colour of mixture also changed slightly after 3<sup>rd</sup> *Bhavana*.
- In this sample amount of *Nimbu swarasa* used is less than 1<sup>st</sup> sample, may be due to one *churna* replaced by *sauvarchala lavana* which easily and absorbed less amount of liquid.
- Time required for 2<sup>nd</sup> sample is 3 days more than 1<sup>st</sup> sample, may be due to more quantity of *lavana* which has hygroscopic nature so mixture got dried late.

**Precautions-** Same as taken during preparation of sample RV 1.

**CJ EXPERIMENT NO.3 (Preparation of sample RV3)**

**Date of commencement** : 21-09-2015

**Date of completion** : 01-10-2015

**Ingredients:-** *Rasona*, *Yavani*, *Shunthi*, *Maricha*, *Pippali*, *Hingu*, *Shuddha Gandhaka*, *Saindhava lavana*- Each 50 gms.

**Bhavana dravya:-** *Nimbu swarasa*- 500 ml.

**Procedure**

1. At first 50 g of *Rasona* cloves were taken and grinded in mixer grinder for making its *kalka*.
2. Then *Rasona kalka* taken in *Khalva yantra* and 50 g of *Hingu* is added in it.
3. Both are mixed properly to make a paste of *Rasona* and *Hingu*.
4. Then all *churnas* from No.3-8 is taken into medium sized *Khalva yantra*.
5. Then *Nimbu swarasa* is added in above mixture gradually and levigated.
6. The whole mixture is levigated until it get dried.
7. Again two (2) *Bhavana* given by *Nimbu swarasa* to whole mixture.
8. Overall three (3) *Bhavana* given to whole mixture.
9. Each time for new *Bhavana* fresh *Nimbu swarasa* was extracted and used.
10. When whole mixture came in to the form that it can be easily rolled in between two fingers,
1. *Vati* prepared manually.
11. It was then dried, weighed, packaged and stored.

**Table No 5: showing details of ingredients and its amount used.**

Sr. No.	<i>Bhavana dravya</i>	<i>Bhavana No.</i>	Amt. of liquid	Date	Increase in Wt.	Colour of mixture after <i>Bhavana</i>	Hrs. Req.
1	<i>Nimbu Swarasa</i>	1 <sup>st</sup>	200 ml	21-09-2015	18 g	Brown	9 hr
2	<i>Nimbu Swarasa</i>	2 <sup>nd</sup>	170 ml	25-09-2015	15 g	Brown	6 hr
3	<i>Nimbu Swarasa</i>	3 <sup>rd</sup>	130 ml	29-09-2015	12 g	Dark brown	7 hr
	<b>Total</b>		<b>500 ml</b>		<b>45 g</b>		22 hr

**OBSERVATIONS**

- Amount required of *Nimbu swarasa* for levigation of whole mixture was more for 1<sup>st</sup> *Bhavana*.
- While mixing *Hingu* and *Rasona*, a characteristic smell felt.
- Colour of mixture also changed slightly after 3<sup>rd</sup> *Bhavana*.

**Precautions:-** Same as taken in preparation of sample RV1.

Table No.6: showing details of final product of all three samples.

Sr. No.	Sample	Total days	Total hours	Initial wt. of mixture	Total Amt. of <i>Bhavana</i> liquid	Final wt. of wet mixture	Final wt. of <i>Vati</i>	% gain in final product ( <i>Vati</i> )
1	RV1	10	23	400	450 ml	437 g	425 g	06.25 %
2	RV2	12	26	400	380 ml	431 g	420 g	05.00 %
3	RV3	11	22	400	500 ml	445 g	435 g	08.75 %

## DISCUSSION

Pharmaceutical processes are techniques which modify the natural medicinal drugs into therapeutically potent dosage form, which are easily absorbable into the biological systems by specific processing methods resulting in the assimilation of newer properties. In the present research work three different samples of *Rasonadi vati*.<sup>[3]</sup> were prepared. These formulations were prepared by adopting the materials and method described in *Vaidya jivanam* by *Loliambaraja* of 15<sup>th</sup> century as well as *Brihat Nighantu Ratnakar*. Prepared the formulation with developing Standard Manufacturing Procedure (SMP) and Standard Operating Procedure (SOP).

In the SOP of *Rasonadi vati*, the number of *bhavana* is not mentioned in the *Vaidyajivanam*. So, the numbers of *bhavana* adopted herewith were as general principle. Regarding 3 *bhavana*- No reference for giving three number of *bhavana* was found in the classics in the preparation of *Rasonadi vati*. However, in the SOPs of various formulations like *Ajirnahara vati*, *Amritprabha vati*, *Agnikumar ras*, *Agnisandipan ras*, *Umasambhu ras*, *Khadiradi gutika*.<sup>[4]</sup> etc. three (3) *bhavana* has been carried out. Considering the above point of view, in the present research work, 3 *bhavana* was given to all the three samples.

Total time for completion of *Bhavana* may depend on the environmental factor, humidity. RV 2 sample is prepared in rainy season. In 12 days total time of *Bhavana* given is 26 hrs. *Lavana*, an ingredient is hygroscopic in nature and high humidity in environment at that time. As this sample is having two *lavana* that might have retained more water compared to other two samples. Amount of *Bhavana dravya* required is also less compared to other two sample, so the weight gain in *vati* is also less (only 5.0%). Sample RV 3 preparation was done in total 11 days. The environment was comparatively dry at that time so *Bhavana* time was 22 hrs which is less compared to other two samples. It may be due to dryness in environment which might have dried the sample earlier. But due to that dryness amount of *Bhavana dravya* (500 ml) added was slightly more as compared to other samples. Weight gain is 8.75% in sample



RV 3. Sample RV 1 was prepared in 10 days with total 23 hrs of *Bhavana*. *Bhavana dravya* added was 450 ml and weight gain was 6.25%.

### CONCLUSION

- 1) Weight gain is proportional to the amount of *Bhavana dravya* added.
- 2) Environmental factor, humidity has its role in the amount of *Bhavana dravya* to be added.
- 3) Hygroscopic nature of *lavana* is responsible for less amount of *Bhavana dravya* to be added.

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