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PREPARATION OF RASAMANIKYA BY SHODHIT HARATAL IN DIFFERENT MEDIA USING SHARAV SAMPUT METHOD

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ABSTRACT

Background: *Rasashastra* deals with many herbo- mineral preparation which acts quickly with minimum dose. *Rasamanikya* is one such classical formulation which is widely used in practise and contains only a single ingredient i.e, *Haratal*. Amongst various preparatory methods of *Rasamanikya*, modified *Sharav* method is considered suitable for large scale preparation. This is an attempt to put forth various *Shodhan* techniques of *Haratal* and thereby preparation of *Rasamanikya* by *Sharav* method and assessment of the comparative organoleptic characteristics of the obtained product. **Aim:** (1) To study the pharmaceutical aspect of *Rasamanikya* by *Sharav Samput* method. (2) To analyse the organoleptic characters of *Rasamanikya* prepared from *Shodhit Haratal* in different media. **Material and Methods:** *Shodhan* of Haratal was done in 3 methods with different media (Method 1 – *Dolayantra Swedan Vidhi* with *Churnodak*, Method 2 –*Dolayantra Swedan Vidhi* with *Kushmanda Swaras*, Method 3 – *Bhavana* method with *Kushmanda Swaras* and *Dadhi*). Preparation of *Rasamanikya* by *Sharav Samput* method with 3 samples of *Shodhit Haratal*. **Discussion:** *Rasamanikya* prepared out of the *Haratal Shodhit* in different medias showed marked variations. *Rasamanikya* out of *Churnodak Shodhit Haratal* showed *Manikya* Varna while that by *Bhavana* method was black in color. **Conclusion:** Here 3 different methods of *Shodhan* for *Haratal* was adopted in order to throw light into the fact that every different method of

Shodhan described in the classics have an impact of the *Shodhit Dravya* which will certainly impart unique quality into the formulation thus prepared out of it.

KEYWORDS: *Rasashastra, Rasamanikya, Haratal, Shodhan, Sharav* method.

INTRODUCTION

Rasashastra is a unique science dealing with metals and minerals which can be consumed by the humans after adequate pharmaceutical processing. This branch of science emphasis on the fact of quick result to every patient with minimum dose of medicine. *Haratal* is one of the Arsenic containing compound categorized under *Uparasa Varga*.[1]

Initially the identification of the *Grahya Haratal* i.e, *Patra Haratal* (ref) is important. *Rasatarangini* describes the *Grahyalakshan* of *Patra Haratal* as having golden color which is free from dirt, heavy and lustrous and that possessing thin layers.[2] These Arsenic drugs need to be administered with utmost care as these can be poisonous if not properly processed. The significance of Arsenic compound is that it will act quickly even with small doses if used judiciously.

Rasamanikya is one of the classical preparation explained in the texts having only one ingredient i.e, *Haratal*. There are many references of *Rasamanikya* in the classical texts. The final product depends on the genuinety of the raw material. The *Shodhan Dravya* used for the purification of *Haratal* also imparts its effect on the *Rasamanikya* thus prepared. The use of *Rasamanikya* is respiratory conditions, skin diseases, allergic and obstructive urinary disorders, autoimmune disorders etc and have a high demand in current pharmaceutical industry.[3]

This is an attempt to prepare *Rasamanikya* by *Sharav Samput* method. *Sharav Samput* method is here adopted in order to prepare *Rasamanikya* in bulk quantity. This study also put light in to the fact of selection of suitable *Shodhan* method for purification.

AIM AND OBJECTIVES

1. To study the pharmaceutical aspect of *Rasamanikya* by *Sharav Samput* method.
2. To analyse the organoleptic characters of *Rasamanikya* prepared from *Shodhit Haratal* in different media.
3. To study and analyse the organoleptic characters of *Haratal* after *Shodhan* with different *Dravyas*.

MATERIAL AND METHODS

This consists of:

1. Preparation of *Kushmanda Swaras*
2. Preparation of *Churnodak*
3. Procedure of *Shodhan* of *Haratal*

1. Method 1 - *Dolayantra Swedan* in *Churnodak* – 3 hrs
2. Method 2 - *Dolayantra Swedan* in *Kushmanda Swaras* followed by *Churnodak* – 6 hrs
3. Method 3 - *Bhavana* of *Kushmanda Swaras* and *Dadhi*
4. Preparation of *Rasamanikya* in 3 batches (Batch A, B and C)

1. Preparation of *kushmanda swaras*[4]

Procedure

1. *Kushmanda Phala* was washed thoroughly with water and cut into 2 pieces.
2. External hard covering were peeled off and seeds were also removed and then cut into small pieces and grinded in a mixer.
3. The paste obtained thereby was stained through a cotton cloth and *Swaras* was extracted.

OBSERVATION AND RESULT

Table no. 1: Showing observations of *kushmanda swaras nirman.*

Quantity of Raw *Kushmanda*	6 kg
Quantity of *Swaras* obtained	2.5 l
Color of *Swaras*	Cream color

1. Preparation of *churnodak*[5]

Procedure

1. 12.5 g of *Sudha Churna* was added to 2.5 l of water and stirred well.
2. The mixture was kept undisturbed for about 9 hours.
3. The supernated liquid was filtered through a clean double layered cotton cloth and the filtrate was collected.
4. This filtrate is called *Churnodak*.

Table no: 2 showing observations of *churnodak nirman.*

Quantity of *Sudha Churna*	12.5 g
Quantity of water	2.5 l
Churnodak obtained	2.2 l
Color	Translucent white liquid

2. *Shodhan* of *haratal*

a) Method 1 - *Dolayantra vidhi* using *churnodak*[6]

b) Method 2 - *Dolayantra vidhi* using *kushmanda swaras* followed by *churnodak*[7]

Procedure

1. *Ashuddha Haratal* was made into small pieces and tied in a cotton cloth in the form of a *Pottali*.
2. A mud pot with a capacity of 1 litre was filled with respective media up to the neck.
3. The *Pottali* containing *Haratal* was suspended on an iron rod into the mud pot in such a way that the *Pottali* does not touch the bottom of the pot.
4. Then *Mandhagni* was given for 3 hrs (temperature not exceeding 100^0C)
5. After 3 hrs the *Pottali* was removed and *Haratal* was washed with hot water.

Note: In the 2nd method, after *Shodhan* in *Kushmanda Swaras*, *Haratal* was washed well and dried and then again *Dolayantra Swedan* in *Churnodak* was carried out for 3 hrs.

Table no. 3: Showing observations of *haratal shodhan* in *churnodak.*

Total time required	3 hrs
Ashuddha Haratal taken	50 gm
Churnodak taken	2 l
Shuddha Haratal obtained	45 gm

Table no. 4: Showing observations of *haratal shodhan* in *kushmanda swaras* followed by *churnodak.*

Total time required	6 hrs
Ashuddha Haratal	50 gm
Kushmanda swaras taken	2 l
Churnodak taken	2 l
Shuddha Haratal obtained	42 gm

Fig. 1: *Ashuddha haratal.*

Fig. 2: *Dolayantra shodhan vidhi.*

Fig. 3: Particles of *haratal* floating over the media.

c) Method 3 - *Bhavana* of *kushmanda Swaras* and *Dadhi*.[8]

Procedure

1. *Ashuddha Haratal* was taken in a *Khalwayantra* and powdered well.
2. Sufficient quantity of *Kushmanda Swaras* was added to the powdered *Haratal* so that the mixture becomes muddy in consistency.
3. Trituration was done till it becomes dry.
4. The procedure of *Bhavana* was repeated for 7 times.
5. After 7th *Bhavana* when the mixture was completely dried, *Dadhi* was added to it till muddy consistency and trituration continued.
6. Thus again 7 *Bhavanas* were given.
7. After a total of 14 *Bhavana*, *Haratal* was washed in warm water.
8. Thorough washing continued till the *Shodhit Haratal* got devoid of the smell of *Dadhi*.

Table no. 5: Showing observations of *haratal shodhan* by *bhavana* of *kushmanda swaras* followed by *dadhi.*

Quantity of *Ashuddha Haratal*	50 g
Quantity of *Kushmanda Swaras* for 7 *Bhavana*	295 ml
Quantity of *Haratal* after 7 *Bhavana*	55 g
Quantity of *Dadhi* for 7 *Bhavana*	323 g
Quantity of *Shuddha Haratal* after a total of 14 *Bhavana*	65 g
Quantity of *Shuddha Haratal* after *Prakshalan* and drying	55 g

Fig. 4: *Bhavana* with *kushmanda swaras.* **Fig. 5: *Bhavana* with *dadhi.***

Fig. 6: *Prakshalan.* **Fig. 7: *Shodhit haratal.***

Comparative observations of *haratal shodhan*

Table no: 6 showing observations of *Haratal Shodhan* in different medias

Media used	***Churnodak shodhit Haratal***	***Kushmand* + *Churnodak shodhit Haratal***	***Bhavana of Kushmanda* + *Dadhi***
Initial amount	50 g	50 g	50 g
Final amount	45 g	42 g	55 g
Color	Yellow	Yellow	Dark Yellow
Texture	Soft powder	Soft powder	Soft powder
Odour	Odourless	Odourless	Slight smell of *Dadhi* after *Prakshalan*.

Pradhankarma[9] [10]

Fig. 8: *Shodhit haratal* in *churnodak.*

Fig. 9: *Shodhit haratal* in *kushmanada swaras* and *churnodak.*

Fig. 10: *Shodhit haratal* in *kushmanad Swaras* and *Dadhi.*

Preparation of *rasamanikya*

1. 10 gm of *Shodhit Haratal Churna* was taken in a small *Sharav* and spread uniformly.
2. Another *Sharav* of same size was kept above the lower *Sharav*.
3. A small hole of 1cm diameter was made to upper *Sharav* in order to assess the *Paklakshan*.
4. Then *Sandhibandhan* was done with mud smeared cloth in order to fix the 2 *Sharavas*.
5. On drying of the *Sandhibandhan*, the *Samput* was subjected to *Mrduagni* (temperature not exceeding 100 ^{0} C)
6. On attaining *Paklakshan*, the Agni was stopped and the *Samput* was allowed for self-cooling.

Paschatkarma

1. On self-cooling, the *Samput* was opened and *Rasamanikya* was collected from the lower *Sharav*.
2. The flakes of *Rasamanikya* gets separated from the *Sharav* on scratching.
3. The flakes of *Rasamanikya* were collected carefully and stored in an air tight container.

This procedure was repeated with three samples of *Shodhit Haratal.*

Batch A – *Rasamanikya* by *Churnodak Shodhit Haratal*

Batch B – *Rasamanikya* by *Kushamanda Swaras* followed by *Churnodak Shodhit Haratal*

Batch C - *Rasamanikya* by *Bhavana* method of *Kushamnada Swaras* and *Dadhi Shodhit Haratal*

OBSERVATIONS AND RESULTS

Paklakshan

After around 10-15 min of heating, if a glass rod is inserted into the *Sharav* through the upper hole to touch the bottom of the lower *Sharav*, a thin thread can be obtained resembling the color of *Manikya*. This can be considered as *Paklakshan* of *Rasamanikya*.

Fig. 11: *Haratal churna* in *sharav.*

Fig. 12: *Pakalakshan.*

Fig. 13: *Rasamanikya.*

Table no. 7: Showing observations of *rasamanikya* in 3 Batches.

	Batch A	**Batch B**	**Batch C**
Shabda	-	-	-
Sparsha	Soft	Soft	Soft
Rupa	Brick red (*manikya varna* appreciated) Flakes	Browinsh red (*manikya varna* appreciated) Flakes	Black Powder
Rasa	Tasteless	Tasteless	Tasteless
Gandha	-	-	-
Qt. of *Rasamanikya*	9 g	8 g	9 g
Temperature	85 ^{0} C	92 ^{0} C	90 ^{0} C
Time required	12 min	15 min	20 min

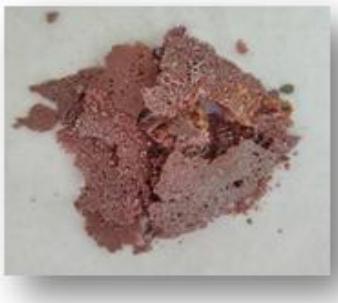

Fig. 14: *Rasamanikya* batch a.

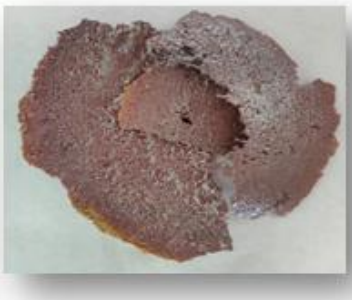

Fig. 15: *Rasamanikya* batch b.

Fig. 16: *Rasamanikya* batch c.

DISCUSSION

Rasamanikya is one of the most frequently used *Rasoushadhi* in clinical practise due to its minimum ingredients and easy method of preparation. There are various methods described in *Samhitas* but for large scale production of *Rasamanikya*, *Sharav Samput* method is more suitable due to its ease of preparation.

The importance of *Shodhan Vidhi* in different medias also is being highlighted in this practical.

Shodhan of *Haratal* by *Dolayantra Vidhi*

Method 1 & 2

In this method, *Pottali* of *Haratal* was suspended in the media and heating was done. The color changes in the media started within 15 minutes of boiling. This indicates that the particles of Haratal started to ooze through the pores of the cloth and mixed with the media. The color of the *Churnodak* deepened more when compared to *Kushmanda Swaras* indicating more penetration of the particles of *Haratal*. The specific smell of sulphur was observed in both mud pots during heating. The temperature of the media was kept constant up to 100 ^{0} C.

After *Prakshalan* and drying it was observed that the *Churnodak Shodhit Haratal* lost the lustre completely with dull yellow color while *Kushmanda Swaras* followed by *Churnodak Shodhit Haratal* still had some lustre in it with slight dark yellow color.

Method 3 – *Bhavana*

In this method, initially 7 *Bhavana* of *Kushmanda Swaras* was given and then 7 *Bhavana* of *Dadhi* was given. The weight of the *Haratal* increased considerably (initial amount 50, final amount 65). It is due to the absorption of the *Bhavana Dravya* in the *Haratal*.

In the process of *Bhavana*, each minute particle of *Haratal* gets coated by each media by the process of continuous trituration. The force implied during this trituration generates a small quantum of heat enough for the molecules of different media to bind together. This causes increase in the weight of the *Haratal*. Moreover some essential qualities of the media is also imparted to the *Haratal* causing the change in the physical as well as the chemical structure.

After *Prakshalan* with warm water, weight of the *Haratal* reduced. This may be due to the loss of minute particles of *Haratal* which floats over the water and also due to the some

molecules of *Dadhi* which was loosely bounded with the *Haratal* during the subsequent trituration. After continuous *Prakshalan* for 7 times, the odour of *Dadhi* was decreased.

Preparation of *rasamanikya*

The method adopted here for the preparation of *Rasamanikya* is *Sharav Samput* method. The advantage of this method is that bulk quantity can be made in a single batch. The *Sharav Samput* was modified with a small hole on the upper *Sharav* in order to assess the *Paklakshan* properly.

From the 3 batches, the actual *Manikya Varna* was appreciated in the Batch A i.e, *Haratal Shodhit* in *Churnodak*. The flakes of the *Rasamanikya* were shiny which could be extracted without any difficulty from the *Sharav*.

In the 2nd batch, *Haratal Shodhit* in *Kushmand Swaras* followed by *Churnodak*, color of the flakes of *Rasamanikya* was bit darker, i.e, Brownish red and in the 3rd batch, *Haratal Shodhit* with *Bhavana* method with *Kushmanda Swaras* and *Dadhi*, the color of *Rasamanikya* was black and was obtained in powder form rather than flakes. This could be because of the burning of herbal contents (*Kushamanda* and *Dadhi*) mixed with *Haratal*. Before reaching the melting point of *Haratal*, the burning of these herbal contents produced ashes and carbon particles were left behind.

In all the 3 batches the temperature was kept below 100 ^{0} C because only melting of *Haratal* was recommended in the procedure. The attainment of this temperature became possible within 15 min of heating in *Mrudagni*.

The only one drawback experienced was that the *Haratal Churna* along the periphery were not converted into *Rasamanikya* due to variation of temperature at the centre and periphery. In order to overcome this, material having a flat uniform surface is recommended.

CONCLUSION

Rasamanikya is one of the classical preparation having only one ingredient i.e, *Haratal*. There are many methods mentioned in the classics for the preparation of *Rasamanikya*. Here *Sharav* method of classics is modified so that the proper *Pakalakshan* can be assessed. From the 3 batches of *Rasamanikya*, the Batch A i.e, *Haratal Shodhit* in *Churnodak* was best in regarding with the organoleptic characters.

Here 3 different methods of *Shodhan* for *Haratal* was adopted in order to throw light into the fact that every different method of *Shodhan* described in the classics have an impact of the *Shodhit Dravya* which will certainly impart unique quality into the formulation thus prepared out of it. The selection of *Shodhan Dravya* should be in accordance with the disease to be treated.

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