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A PHARMACEUTICAL REVIEW ON NAVASADARA SODHANA ACCORDING TO RASA RATNA SAMUCHAYA

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ABSTRACT

Without *sodhana*, we cannot use any drug in Ayurvedic formulations. That's why *sodhana* is very essential in Ayurvedic herbo-mineral preparations. For efficacy and safety of the drug, proper *sodhana* is important. Also, by *sodhana* process, we can improve the qualities of the basic elements of the drug to exert its good effect. *Navasara* is one of the 8 *sadharana rasas* explained by various *rasa* books. It is also included in *ksaravarga* and *lavanavarga* by different *acharyas*. According to *Rasa Ratna Samuchaya*, *sodhana* of *Navasara* is done by dissolving it in water, then filtering, and the filtrate is heated until it gets completely dried. Here, an attempt is made to review the *sodhana* of *Navasara* by this method.

Keywords: Navasara, Sodhana, Sadharana Rasa, Rasasastra

INTRODUCTION

Ayurveda is a traditional system of medicine with historical roots in the Indian subcontinent. In Ayurveda, materials from natural sources are being used for the preparation of Ayurvedic formulations. This includes plants, minerals/metals, and animals. Rasashastra is a branch of Ayurvedic medicine that deals with formulations containing minerals/metals and, significantly, Parada. From the fact that the name of this branch has been given after Parada (Rasa in Rasashastra) indicates the emphasis laid by the then healthcare professionals on the use of mercury or Rasa or Parada in therapeutics. According to the Ayurvedic Formulary of India, mercury is reported to be the widely used heavy metal. But nowadays, modern scientists are concerned with the use of heavy metals in Ayurvedic preparations. According to Ayurveda, before these metals are used for treatment, a purification process should be carried out so that the possibility of adverse effects gets eliminated. Rasashastra has existed since the Vedic period. It has also been reported that Buddhist sages were the first to use mercury and were believed to

be among the creators of treatments using metals and minerals in their appropriate form. Many drugs used for Rasayana Chikitsa (rejuvenation therapy) contain Parada (Rasa) along with other metals. These are classified as Rasaushadhies. Since Rasaushadhies are effective in small doses and give quick relief as compared to pure herbal formulations, they have gained tremendous significance. Great caution should be taken while using metals. In the texts, it is suggested that they should be reduced to micro-fine powder. Before these metals are used in formulations, they should be treated appropriately by different processing techniques like Shodhana, Marana, Amritikarana, etc. This is responsible for the elimination of possible adverse effects. In ancient Rasa literature, it is reported that ancient Rasacharyas recognized Doshas in almost all drugs, including metals, minerals, etc. To remove these Doshas, certain techniques and procedures were prescribed, such as Shodhana and Marana. For purification, Samanya Shodhana and Vishesh Shodhana methods are carried out. Sodhita Navasara is used for the purification of mercury according to various classics like Ayurveda Prakasha. But if not performed properly, it may lead to many complications like loss of vision, skin diseases, vomiting, and even death. In Ayurveda, heavy metals are converted into a non-metallic form. These compounds should be initially detoxified. It is now agreed that the manufacturing of Ayurvedic preparations as per ancient scriptures and using modern techniques in combination will lead to non-toxic formulations.

DESCRIPTION OF NAVASARA

According to different Acharyas, Navasara is the Kshara which is obtained by burning the woods of Kareera (*Capparis aphylla*) and Pilu (*Salvadora persica*), animal excreta, and in brick kilns. It is also prepared by using the urine of camels and human beings. Chemically, Navasara is ammonium chloride (NH_4Cl). The history of Navasara is not found in the Vedic period. However, references are found in the Samhita Kala, i.e., in Charaka Samhita, in Gulma, Agnimandya Chikitsa, Bhallataka Ghrita, Lavana Panchaka, etc. Later, all Rasashastra texts mentioned Navasara. It is a white, coarsely crystalline powder that is slightly salty and sour in taste. On heating, it sublimes to form white smoke, which is due to a mixture of ammonia and hydrochloric gas.

SYNONYMS OF NAVASARAM

Name	Rasa ratna samuchaya	Rasa Tarangini	Rasa prakasa sudhakara	Rasa jala nidhi	Rasa manjari	Ayurveda prakasha	Brihat rasa raja sundara
<i>Chullika lavanam</i>	+	+	+	+		+	+
<i>Navasara</i>	+	+	+	+	+	+	+
<i>Navyasara</i>		+					
<i>Navasadara</i>		+					

<i>Nrusadara</i>		+			+		
<i>Nrusara</i>		+			+		
<i>Narasara</i>		+			+		
<i>Kittakshara</i>		+					

VERNACULAR NAMES

Sanskrit – Navasara

Kannada – Navasagara

Gujarati – Navasara

Tamil – Navacharum

Telugu – Navasagaram

Punjabi – Nousadar

Bengali – Nishadala

English – Ammonium chloride

RASA PANCHAKA

Rasa – Lavana

Guna – Laghu, Sukshma

Virya – Usna

Dosa Karma – Tridosaghna

Therapeutic Actions – *Jataragni Pradeepana*

PROPERTIES ACCORDING TO DIFFERENT ACHARYAS

Properties	Rasa ratna samuchaya	Rasa tarangini	Rasa prakasa sudhakara	Rasendra mangalam	Ayurveda prakasha	Brihat rasa raja sundaram	Rasendra chudamani
<i>Panduram</i>	+						
<i>Lavanam</i>	+						
<i>Laghu</i>	+	+					
<i>Snigdha</i>		+					
<i>Sukshma</i>		+					
<i>Tikshna</i>		+		+			
<i>Loha dravanaka rasa jarana</i>	+	+	+		+	+	+
<i>Saaraka</i>		+		+			+

<i>Jataragnide epana</i>	+	+	+			+	
<i>Plihagulma samanam</i>	+	+	+	+		+	
<i>Maamsaaji rnahar</i>	+	+	+			+	

Sodhana of Navasara according to different texts

Rasa ratna samuchaya	Rasa tarangini	Rasendra mangalam
Dissolved in water, then filtered and filtrate is heated till it gets completely dried	1) In water 2) <i>Urdhwapatana</i> in <i>damaruyantra</i>	<i>Dolayantra swedana</i> in water

DOSE: 2-8 Gunja

“Dwigunjathascha ashta gunjamitham thu navasaadaram

Pranacharyaha prayunjeetha balakaaladhyapekshaya” (RT)

CLASSIFICATION OF NAVASARA ACCORDING TO DIFFERENT AUTHORS

Sl No	REFERENCES	SADHARANA RASA	LAVANA VARGA
1	Rasa ratna samuchaya	+	+
2	Rasarnava		+
3	Rasendra chudamani	+	+
4	Rasendra sara sangraha		+
5	Ayurveda prakasha	+	+
6	Rasa jala nidhi		+
7	Brihat rasa raja sundara		+

NAVASADARA SODHANA

Starting time-10:00 am, ending time-1:30 pm

Aim and objectives

To perform sodhana of navasara samples with reference to rasa ratna samuchaya

Materials & Methods

EQUIPMENTS

Stainless steel vessels, spoon, cloth, khalwa yantra & measuring jar

Ingredients & quantity for navasagara samples

Ingredients	Sample 1	Sample 2	Sample 3
Asodhita navasara	500gm	500gm	500gm
Water	1500 ml	1500 ml	1500 ml

Procedure

- **500 g each sample** of *asodhita Navasagara* was powdered well in a *Khalwa Yantra*.
- It was taken in a stainless-steel vessel and dissolved in **1500 mL of plain water** each time.
- After being completely dissolved, it was filtered into another vessel through a cloth.
- The filtrate was further boiled until the water was completely evaporated.
- After the moisture content had completely disappeared, the *sodhita Navasagara* samples were collected.

Dimensions of Stainless-Steel Vessels

- **Diameter:** 23 cm
- **Circumference:** 72.22 cm
- **Depth:** 11.5 cm
- **Height:** 12.5 cm
- **Brim thickness:** 1 cm

Weights

- **Weight of empty vessel:** 445 g
- **Weight of vessel with Navasara:** 945 g
- **Weight of vessel with Navasara and water:** 2445 g
- **Weight after filtering:** 2440 g

Temperature (°C)

- **Room temperature:** 25.7°C
- **Vessel temperature:** 25°C
- **Vessel with Navasara:** 24°C
- **Temperature of water:** 23°C
- **Vessel with Navasara and water:** 17°C (outside vessel); 9°C (inside vessel)
- **Dissolving time:** 9 minutes

OBSERVATIONS

Changes in navasara

Change	Sample 1	Sample 2	Sample 3
Initial colour	Dull white	Dull white	Dull white
Colour after powdering	Pure white	Pure white	Pure white
Colour after sodhana	Pure white	Pure white	Pure white
Weight before sodhana	500 gm	500 gm	500 gm
Weight after sodhana	478 gm	487 gm	490 gm
Weight loss	22gm	13 gm	10 gm
Percentage of loss	4.4%	2.6%	2%

Changes in water

Observations	Sample 1	Sample 2	Sample 3
Initial weight	1500 ml	1500 ml	1500 ml
pH of plain water	6.46	6.46	6.46
pH after dissolving navasara	5.80	5.80	5.80
Colour of water after dissolving	No change	No change	No change

Observations during heating

Time	Changes in the solution
15 min	Solution started boiling.appearance of white particles on the sides of the vessel.solution was clear
50 min	Appearance of white layer on the water surface
55 min	Colour of solution turned white
1 hr	Solution became turbid
1.10 hr	White coloured product formation at the bottom
1.20 hr	Product turned semisolid

1.45 hr	Powdering of product started
2.30 hr	Completely powdered pure white coloured product obtained

Precautions

- Navasara should be finely powdered
- Filtering should be done only after the complete dissolution of navasara into the water

Discussion & conclusion

Navasadara is one of the *rasadravyas* included under *sadharana rasa*. Various opinions are there but here according to *rasa ratna samuchaya* the *sodhana* is done. 500 gm each sample of *asodhita navasadara* is powdered well in *khalwa yantra*. It is taken in a stainless steel vessel and dissolved in 1500 ml of plain water each time. After completely dissolved, it is filtered to another vessel through a cloth. The filtrate is further boiled till the water gets completely evaporated. After the moisture content is completely disappeared, *sodhita navasadara* samples are collected. 2-4% loss was observed.

PICTURE SHOWING NAVASADARA SODHANA



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