

PHARMACEUTICAL STUDY OF RASA KARPURA

Dr. Aptha S. M.^{1*}, Dr. Rachana C.², Dr. Parikshith³, Dr. Chaithra P. B.⁴, Dr. Samarth Ballyaya D.⁵

^{1*,4,5} PG Scholar, Department of P.G Studies in Rasashastra and Bhaishajya Kalpana, Karnataka Ayurveda Medical College and Hospital, Mangalore.

²HOD and Professor, Department of P.G Studies in Rasashastra and Bhaishajya Kalpana, Karnataka Ayurveda Medical College and Hospital, Mangalore.

³Professor, Department of P.G Studies in Rasashastra and Bhaishajya Kalpana, Muniyal Institute of Ayurveda Medical Sciences, Manipal.



***Corresponding Author: Dr. Aptha S. M.**

³ PG Scholar, Department of P.G Studies in Rasashastra and Bhaishajya Kalpana, Karnataka Ayurveda Medical College and Hospital, Mangalore. DOI: <https://doi.org/10.5281/zenodo.23829537>

How to cite this Article: Dr. Aptha S. M.^{1*}, Dr. Rachana C.², Dr. Parikshith³, Dr. Chaithra P. B.⁴, Dr. Samarth Ballyaya D.⁵ (2026). Pharmaceutical Study Of Rasa Karpura. World Journal of Pharmaceutical and Medical Research, 12(11), 321-327. This work is licensed under Creative Commons Attribution 4.0 International license.

Article Received on 26/09/2026

Article Revised on 16/10/2026

Article Published on 01/11/2026

ABSTRACT

Rasa means *parada* and *karpura* refers to *sweta varna* similar to *karpura*. *Rasa Karpura* is a *nirgandha* type of *Kupipakva Rasayana*. Used for treating *phiranga roga*, *atisara*, ***twak vikara***, etc. Although various references of *Rasakarpura* preparation are described in different classical texts but for present study the reference selected from *Rasa Tarangini* (6/65-75) which dealt with simple techniques. *Rasa Karpura* is prepared with *parada*, *Sandra gandakaamla* (con. Sulphuric acid) 1:1½ and equal quantity of *Saindhava lavana*. The preparation was carried out by adopting both Open and Closed methods. The results obtained showed a quantitative significant with evident variations between the two products.

KEYWORDS: *Rasakarpura*, *Valuka Yantra*, *Rasa Tarangini*, Con. Sulphuric acid, Open method, Closed method, *Saindhava Lavana*, *Parada*, *Mercury*, *HgSO₄*, *evaporation*.

INTRODUCTION

Rasashastra is Ayurvedic science which deals with *lohavada* and *dehavada*. *Rasa* stands for *parada* (mercury) with special properties like *jara* (oldage), *ruk* (pain) and *mrutyu janyavyadinasha* (death causing diseases gets cured).^[1] *Rasa Chikitsa* is considered as *Aushadha ubhaya* - best among others due to their *Alpamatra* (minute dose), *Aruchi* (tastelessness), *Kshipramarogayadhayaka* (cures immediately) and high efficacy when used more cautiously.^[2]

The word *Rasa karpura* comprises '*Rasa*' and '*Karpura*'. *Rasa* indicates *Parada* and *Karpura* indicate a substance which is white in color. *Rasakarpura* is a white colored mercurial product prepared by *Kupipakva* method.^[3] *Rasa karpura* is *Nirganda* and one type of *murchana*. *Rasa karpura* is described by our *Acharya's* in their respective classics. Both external and internal administration is indicated for treating – *sannipatika*, *Sahaja* and other types of *Phiranga roga* (syphilis), *Atisara*, *Krimi visha* (worms), *Twak vikara* (skin diseases), *rakta dosha* (diseases of vitiated blood), *upadamsha* (gonorrhoea), *kapha-raktaja pravahika*,

spota, *kandu*, *mandala kusta*, *pama* (papillae), *kusta*, *vraha*, etc.^[4]

Rasakarpura is first mentioned as '*Ganasara Rasa*' by *Rasapraksha Sudhakara* in 12th century AD.^[5]

Rasakarpura is also used as an ingredient in various formulations and are prepared by different methods like *Kharaliya Rasayana*, *Kupipakva rasayana*, *Vilayana Bhasma* (*puta* method), *lepa*, *pottali* etc.^[6]

Rasa Tarangini is the text where preparation methods and administration of *Rasadi Dravyas* are dealt with simple exclusively indicated manner. *Rasakarpura* is thus prepared by following this text accordingly.

Rasakarpura is also included in Schedule E1 of Drug and Cosmetic Act 1940 and Rules 1945.^[7]

After being exposed to toxic fumes of Sulfuric acid yield obtained is very less quantitatively by *Rasa Vaidya's* so open and closed methods are adopted here to observe for

any changes at finished product. Thus, pharmaceutical study of *Rasakarpura* employed.

MATERIALS AND METHODS

Glass rod, Mercury, Sulfuric Acid, *Saindhava Lavana*, Weighing machine, *Sharava*, *Valuka yantra*, Glass beaker, Glass funnel, *multhani mitti*, Glass plate, Kora cloth, gas stove, etc.

RASAKARPURA

POORVAKARMA: *Shuddha Parada* of 60 grams (1 part) Con. Sulphuric acid (H_2SO_4) of 90 ml ($1\frac{1}{2}$ part) taken in *sharava* and subjected to *valuka yantra* in an open space near the pharmacy of Karnataka Ayurveda Medical College, Mangalore. Frequent stirring with a glass rod

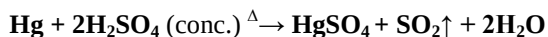
was done for 6 hours until the *Parada* and liquid gets completely evaporated with dense white fumes of sulfuric acid are observed. Final product obtained in the form of white powder without any moisture content in it. Left for self-cooling overnight.

Precautionary Measures – use of masks, gloves, avoidance of public contact/inhalation of fumes, prevention of single prolonged exposure.

Next day white chalky powder was collected from the *sharava* and weighed – 83 grams. An equal quantity of *saindhava lavana* powder was taken in *kalva yantra* and made into homogeneous mixture, totaling 166 grams.



Figure 1: Preparation of Mercuric sulphate.



Where, Hg = Mercury

H_2SO_4 = Concentrated Sulphuric acid

HgSO_4 = Mercury (II) Sulphate (Mercuric Sulphate)

Δ = Heating

SO_2 = Sulphur dioxide gas

H_2O = Water

Observation – Thick dense white fumes are observed which gradually increased during end of the procedure. Continuous stirring with glass rod is done throughout while performing the preparation.

Precaution – Wearing mask and preventing single exposure and drank sufficient milk as an antidote for sulfuric fumes.

Performed in open space without allowing other people to get exposed to this concentrated gas till it gets diluted with atmospheric air.

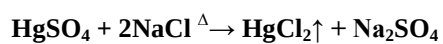
OPEN FUNNEL METHOD

A homogeneous mixture weighing 80 g was taken separately and collected in a *Sharava*. A glass funnel was placed in an inverted position, and *Sandhibandhana* was performed around the junction to prevent the escape of particles. The assembly was subjected to *Agnisamskara* in a *Valuka Yantra* for 3 hours. The base of the funnel

was kept open until the moisture content had completely evaporated; this procedure was followed as the open method. After complete evaporation, the funnel was sealed, and the temperature was recorded. The formation of fumes and the development of a clear crystalline structure were observed using a torch. The assembly was then allowed to undergo *Swangasheeta*. On the following day, the *Sandhibandhana* was carefully removed, and the base was separated using a small knife. The final product, *Rasakarpura*, deposited inside the funnel was collected using a glass rod and a glass plate. The obtained *Rasakarpura* weighed 25 g and was stored in a glass bottle. The residual material weighed 28 g, resulting in a total weight loss of 27 g.



Figure 2: Preparation of Mercuric chloride with open method.



Where,

HgSO_4 = Mercury(II) Sulphate

NaCl = Sodium chloride

Δ = Heating

HgCl_2 = Mercuric Chloride (Rasa Karpura)

Na_2SO_4 = Sodium sulphate



Figure 3: Final product of Mercuric chloride with open method.

CLOSED BEAKER METHOD

A homogeneous mixture weighing 86 g was collected in a Sharava. A 500 mL Borosil glass beaker was placed in

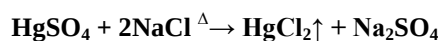
an inverted position, and *Sandhibandhana* was performed around the junction to prevent the escape of particles. The preparation of *Rasakarpura* was carried

out using a completely closed method to prevent the escape of moisture. The assembly was subjected to *Agnisamskara* in a *Valuka Yantra* for 3 hours. The formation of fumes and the development of a clear crystalline structure were observed using a torch. The assembly was then allowed to undergo *Swangasheeta*.

After cooling, the final product deposited on the inner surface of the inverted glass beaker was carefully collected using a glass rod and a glass plate. The obtained *Rasakarpura* weighed 12 g and was stored in a glass bottle. The residual material weighed 45 g, with a total weight loss of 29 g.



Figure 4: Prepaetion of Mercuric chloride with closed method.



Where,

HgSO_4 = Mercury(II) Sulphate

NaCl = Sodium chloride

Δ = Heating

HgCl_2 = Mercuric Chloride (*Rasa Karpura*)

Na_2SO_4 = Sodium sulphate



Figure 5: Collection of Mercuric chloride with closed method.

GENERAL DOSE^[8] – 1/64 *Ratti* to 1/32 *Ratti* (1.9 mgs to 3.9 mgs)

Administration in solution form

- *Rasa Karpura* + 16 parts of cold water till completely dissolves in it.
- *Shudda Navasagara* 5 *ratti* + *Rasa Karpura* 5 *ratti* (625mgs) = mixture + 60 *tola* (720ml) of water stir well = 30-60 drops internally can be administered in different conditions.

Administration in *Churna* form

- 5 *masha* of *twak churna* + 1 *ratti* of *Rasa Karpura* triturated in *khalva yantra* with *nimbu rasa*. Dose- 1 *ratti*.

Rasa karpura drava^[9]

- *Rasa karpura*: water 1:1000 or 1:2000 for washing chronic vranas in *phiranga roga*.
- To wash vaginal parts, eyes, open wounds and such other soft parts 1:5000 parts.



Figure 6: Mercuric chloride dissolved in water.

Observation – few samples of *Rasakarpura* taken in earthen vessel then added with water instantly colour changes from white to ash black color later get dissolved in water completely with formation of clear solution.

Amayika prayoga according to classics

- *Rasa Karpura* cures *atisara*, burning sensation with chronic diarrhoea, *dravapeetamala*, *kapha-raktaja pravahika*.
- *Kumkuma kesara* + *krishna marica* + *Rachana candana* + *Lavanga* + *Jati patri* (1 ratti) each → triturated in *kalva yantra* with *nimdu rasa* → 1-2 ratti which is used in treatment of acute and chronic *Phiranga roga*.^[10]
- *Amir rasa* with *anupana-draksha*, which is used in *Grantivata*, *Upadansha*.^[11]
- *Karpuradi vati* prepared with *karaliya rasayana* method, dose 1/14 part, *anupana* – *sharkara* and indicated in *Upadansha*.^[12]
- *Rasakarpura vati* dose 1 *Maricha*, *anupana* – *stanya*, *Madhu* and indicated in *Prameha*, *Vataroga*, *Balaroga*.^[13]
- *Mallasindura anupana*- *adraka swarasa*, *madhu* which is indicated in *Tamakaswasa*, *Vatakapharoga*, *Phiranga*.^[14]
- *Gulabi Malahara Lepam* is used for *Dadru*, *Pama*, *Agnimandya*, *Arsha*.^[15]

- *Rasa Garbha Pottali-2* dose 1-2 *tandula* with *roganusara anupana* for *Upadansha*, *Sarvaroga*, *Vajikara*, *Vrishya*.^[16]

RESULTS AND DISCUSSION

Open method the quantity is more about equal quantity of that residue while comparing with closed method is obtained. Open funnel method sealing done only after moisture present in *saindava lavana* gets evaporated completely. Thus, preventing the loss of Mercuric chloride through evaporation. This difference is because in open method moisture is evaporated completely but in closed method water vapor collects at the base of glass beaker no place to escape. Hence water droplets fall upon processing preparation thus hampers the product quantitatively.

In Open method *Rasakarpura* obtained gain is 31.25% and loss is 68.75% (33.75% + residue 35%). In Closed method *Rasakarpura* obtained gain is 13.95% and loss is 86.05% (33.72% + residue 52.33%). Results showed vast difference in gain as well as loss especially in residue which are almost equal to double the obtained quantity with open funnel method when compared with closed beaker method used for preparation of *Rasakarpura*.

The preparation was carried out by adopting both Open and Closed methods. The results revealed a quantitatively significant with markable differences between the two products.

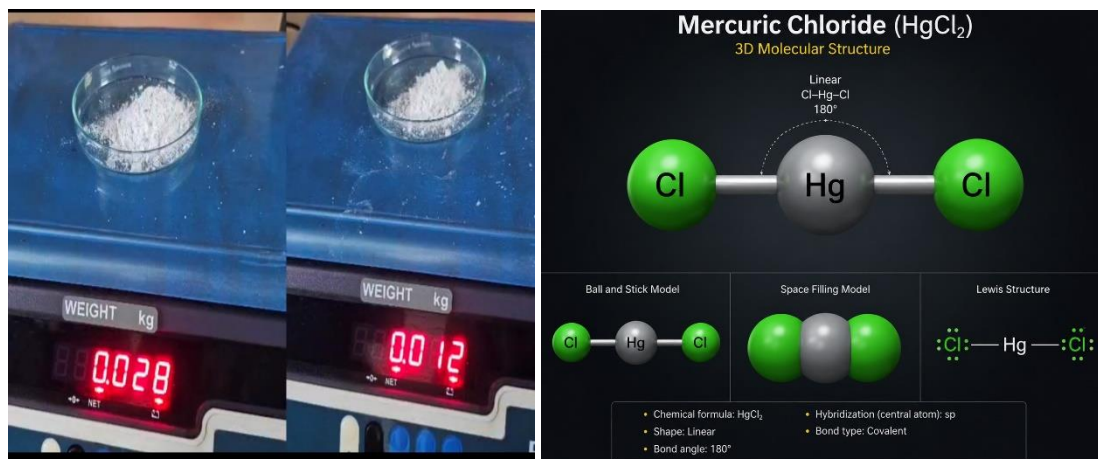


Figure 7: Final weight of Mercuric chloride (*Rasa karpura*) obtained by both methods with molecular structure.

When HgCl_2 dissolves in water, it undergoes partial hydrolysis and forms an equilibrium involving hydroxymercuric and chloro-mercurate species.



The important point is the formation of (hydronium ions). Because hydronium ions are produced, the solution becomes slightly acidic.

Although HgCl_2 is only slightly ionized in water, it can react with substances such as proteins. This reaction can release or make available a significant number of mercuric ions, Hg^{2+} .

Mercuric ions are highly reactive with biological molecules, particularly proteins. Therefore, when HgCl_2 solution externally contact with the skin, it can react with skin proteins and cause irritation and tissue damage.^[17]

Importance of closing/sealing

- Heating converts the reaction mixture to volatile HgCl_2 (*Rasa Karpura*)
- The HgCl_2 vapors rise on heating and get condense on cooler upper inner surface of the funnel as white crystals.
- Na_2SO_4 remains at the base of the vessel.

Limitations

Rasakarpura is one of mineral preparation where long time exposure results in sulfur intoxication and the final product obtained is quantitatively less.

Pharmaceutically ayurvedic manufacturers are only limited number available today because – toxicity risk, specialized manufacturing facilities, technical expertise process control, strict quality control, Hazardous, etc.

CONCLUSION

Rasa Taranginikara has told *Sandra Gandakamla* preparation as well as *Rasakarpura Nirmana* methods along with *Prayoga Vidhi's* accordingly. Other references are also found in *Sidda Sampradaya*. *Rasakarpura* was abundantly used to treat *Upadansha*

(gonorrhea) diseases earlier before development of antibiotics. Several formulations *rasakarpura* is used as one of the ingredients and in different dosage forms proved efficacy in present era. Hence preparation of medicine minimizing loss helps the gain of product with more profit. This research may preliminarily work for further research on *Rasakarpura* qualitative analysis, formulations and Clinical trials.

REFERENCES

1. Shastri Ambikadatta, Rasa Ratna Samucchaya, Hindi Commentary, 1st adyaya, 77 verse, reprint 2003, Varanasi; Chaukhambha Amarabharti prakashan, pg.6.
2. Mishra Siddinandan, Rasa Ratna Samucchaya, Hindi Commentary, 28th Lohakalpa adyaya, 1, reprint 2021, Varanasi; Chaukhambha Orientalia, p.633.
3. Dhundhuknath. Rasendra Chintamani. Mishra SN, editor. 1st ed. Varanasi: Chaukhamba Orientalia, 2000; p.15.
4. Banarasidas Motilal, Rasa Tarangini of Kashinathshastri, Hindi commentary, chapter 6th, Verse 72-74; New Delhi, p.117.
5. Rasa Prakash Sudhakar, Bhatt Yashodhara, Mishra S. N. Hindi Commentary, 3: 6-9, Chaukhamba orientallia, Varanasi, 1998.
6. Neky Mehta, Galib, Prajapati PK, Review on formulations of Rasakarpura (Mercurial salt). Ayurpharm Int J Ayur Alli Sci, 2013; 2(3): 69-76. ISSN: 2278-4772.
7. Malik V., Drugs and Cosmetics Act 1940, Eastern Book Company, Lucknow, 2005; p.317.
8. Sharma Sadananda, Rasa Tarangini, English Commentry by Ravindra Angadi, 6 Murchana vijnaniya Taranga, verse 76, edition 2020, Varanasi, Chaukhamba Surbharati Prakashan, p.78.
9. Sharma Sadananda, Rasa Tarangini, English Commentry by Ravindra Angadi, 6 Murchana vijnaniya Taranga, verse 103-106, edition 2020, Varanasi, Chaukhamba Surbharati Prakashan, p.81.
10. Sharma SN. Rasa Tarangini. Shastri KN, editor. 11th ed. Delhi: Motilal Banarasi Das, 2004; p.118.

11. Bhatta KR. Siddha Bhaishajya Manimala. Bhatta RK, editor. 2nd ed. Varanasi; Krishna Das Academy, 1999; 629.
12. Sharma HP. Rasa Yoga Sagar. Vol. I. 1st ed. Varanasi; Krishna das Academy, 1999; p.238.
13. Sharma HP. Rasa Yoga Sagar. Vol. II. 1st ed. Varanasi; Krishna das Academy, 1999; p.618.
14. Anonymous. The Ayurvedic Formulary of India. Part 1. 2nd ed. New Delhi: Govt of India, 2003; p.283.
15. Yadavji Trikamji. Siddha Yoga Sangraha. 11th ed. Nagpur: Vaidnath Ayurved Bhavan, 2000; p.126.
16. Sharma HP. Rasa Yoga Sagar, Vol II. 1st ed. Varanasi; Krishna Das Academy, 1999; p.528.
17. Block JN, Roche EB, Soine TO, Wilson CO, Inorganic Medicinal and Pharmaceutical Chemistry. 1st ed. Bombay: Verghese Publishing House, 1986; p.336.