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PREPARATION AND SHODHANA METHODS OF RASA KARPURA (MERCURIC CHLORIDE)

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ABSTRACT: Rasa Karpura is a well known and popular non-sulphur compound of Ayurvedic mercurial preparation. Chemically Rasa Karpura is a mercuric chloride. Highly toxic, corrosive to mucous membranes. Ingestion may cause severe nausea, vomiting, hematemesis, abdominal pain, diarrhoea, malena, renal damage, prostration. 1-2 gm is frequently fatal, poisoning and death also have occurred from intra uterine douches.

Toxicity study revealed that Mercuric Chloride in therapeutic doses proved to be least toxic. It must be used after its proper purification; otherwise it may be harmful or toxic for the body. After Shodhana of Rasa Karpura is used therapeutically for bacteriostatic and bactericidal effect. This Research work is completed in NIA, Jaipur in 2006.

1.

INTRODUCTION

Rasa Karpura is a well-known non-sulphur mercurial preparation in Ayurveda, with approximately 45 distinct formulae documented in classical literature. Its historical roots trace back to the 10th century A.D. in the *Rasarnava*, though the term was first specifically coined by Bhava Mishra in the 16th century A.D. for the treatment of *Phiranga Roga* (venereal diseases). While ancient formulae utilized sulphate compounds like *Kasisa* and *Tuttha*, 20th-century scholars transitioned to using concentrated sulphuric acid (H_2SO_4) to react with Mercury (Hg) to form Mercuric Sulphate, which is subsequently converted into Mercuric or Mercurous Chloride using Sodium

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Chloride ($NaCl$).

2. CHEMICAL COMPOSITION AND STUDY

The chemical nature of Rasa Karpura has been a subject of historical controversy among Ayurvedic scholars:

· **Mercuric Chloride ($HgCl_2$):** Supported by scholars such as Vaidya V.M. Dwivedi and practically proven by Dr. G. Prabhakar Rao (1991), specifically when using 1½ parts H_2SO_4 to Mercury.

· **Mercurous Chloride (Hg_2Cl_2):** Described by Dr. Vaman Ganesh Desai and others; typically formed when a lower ratio (½ part) of H_2SO_4 is used.

· **Physical Properties:** It appears as a heavy, white, crystalline powder that is odourless and volatilizes at approximately 300°C. It is soluble in hot water (1 gm in 13.5 ml).

3. PREPARATION OF RASA KARPURA

Step	Process	Chemical Reaction
I. Intermediary	Heating *Shudha Parada* with *Gandhakamla* (H_2SO_4) for 7 days until it forms a powder.	$$Hg + 2H_2SO_4 \rightarrow HgSO_4 + SO_2 + 2H_2O$$
II. Sublimation	Mixing Mercury powder with *Saindhava Lavana* and heating in a *Valuka Yantra* up to 450°C.	$$HgSO_4 + 2NaCl \rightarrow HgCl_2 + Na_2SO_4$$

4. TOXICITY AND SAFETY

Rasa Karpura is highly toxic and corrosive to mucous membranes. Ingestion of 1–2 grams is frequently fatal, causing severe gastrointestinal distress and renal damage. However, toxicity studies indicate that in strictly controlled therapeutic doses, it remains safe. In Ayurveda, this toxicity is managed through **Shodhana** (purification) methods, such as:

· Heating within the fruit of *Averrhoea carambola* (Kamarakha).

· Suspension in *Dola Yantra* with lime water (*Churnodaka*) or cow's milk with *Bhanga*.

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· Processing with *Ghrita* in an iron pot for 9 hours.

5. THERAPEUTIC APPLICATIONS AND DOSAGE

Rasa Karpura exhibits potent antimicrobial properties, effectively combating resistant bacteria like *Pseudomonas aeruginosa*.

· **Internal Use:** Administered in minute doses (2–4 mg) mixed with carriers like *Dalchini* or *Navasadar*. It is never used as a single drug.

· **External Use:** Historically used in 0.1% solutions for skin disinfection and 0.001% for vaginal irrigation or wound cleansing.

6.

CONCLUSION

Rasa Karpura is a potent mercurial chloride preparation that demands meticulous *Shodhana* and precise dosing. While chemically identified as Mercuric Chloride, its Ayurvedic preparation through *Valuka Yantra* ensures the yields of needle-shaped crystals used for deep-seated infections and antimicrobial needs. Modern findings confirm its efficacy against diarrheagenic bacteria, provided it is used with the caution stipulated in classical texts.

7.

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