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Review Article

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## Ayurvedic Review on Classical Preparation Methods of *Rasa* Drugs

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### Abstract

Ayurveda employs a variety of ideas with the aim of creating a healthy society through disease treatment and prevention. In ancient *Rasashastra*, for instance, mercury was mined for use as a medicine base, and *Rasashastra* is one of the branches of Ayurveda that deals with the art of alchemy. *Rasa-Aushadhi* refers to the medicines which are prepared, and classified under the alchemy discipline where medications are processed through *Murchana*, *Rodhana*, *Jarana* and *Mardana* along with *Shodhana*. These methods purify substances, improve their therapeutic power and enhances therapeutic window of *Rasa-Aushadhi*. This paper highlights the understanding of *Ras Dravyas* and significance of their preparatory methods.

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### 1. Introduction

*Rasashastra* covers methods of extracting medicine from minerals and metals by means of specific processes. These processes improve the final product's clinical usefulness as all the constituents play an important role in the treatment of many health issues. Effective preparation of *Rasa Dravyas* is needed to harness its potential health benefits and take care of the toxic impacts of unprocessed metals and minerals. *Rasoushadhis* are exceptionally useful in the treatment of severe diseases which include obesity, arthritis, anemia, gastric problems and sexual dysfunctions, etc. (1-4)

*Rasoushadhis* are very strong, since smaller dose can produces quick and potent action. If taken with honey, these preparations are quickly absorbed into the deepest tissues of the body, where they act as metabolic catalysts that deliver the therapeutic properties of their herbal components directly at the cellular level. Some *Rasa* medicines even gain effectiveness over time, making them free from an expiration date. *Rasa* medicines are relatively easier to store and preserve as compared to other herbal formulations. Additionally, their taste is neutral, and they provide the benefit of easy administration.

*Rasaushadhis* are subdivided into 'those containing *Parada* or *bhasmas* that have mercury, and non-mercurial formulations. In Ayurvedic drugs, mercury is conceived to be a bio-enhancer rather than an individual medicine because its combination with other medicaments enhances potency while reducing the exact dose to be applied. Before using, mercury purification is needed to make it therapeutically viable. Mercury based drugs can be categorized into different subcategories which includes *Parpati Rasayana*, *Kupipakwa Rasayana*, *Pottali Rasayana* and *Kharaliya Rasayana*. These formulations are prepared using suitable liquid media through a process known as trituration, which reduces the drug into a fine, absorbable form. (4-7)

### 2. Specific Preparations

Preparation of *Parpati Rasayana* includes liquefied *Kajjali* which poured onto a banana leaf placed on a flat surface, then pressed with banana leaf and cow dung to form thin flakes that is called *Parpati*.

*Kupipakwa Rasayana* is made by heating purified mercury, sulfur, and other minerals in a sealed glass bottle under controlled conditions. Here term *Kupi* is used for glass bottle which used in preparation method.

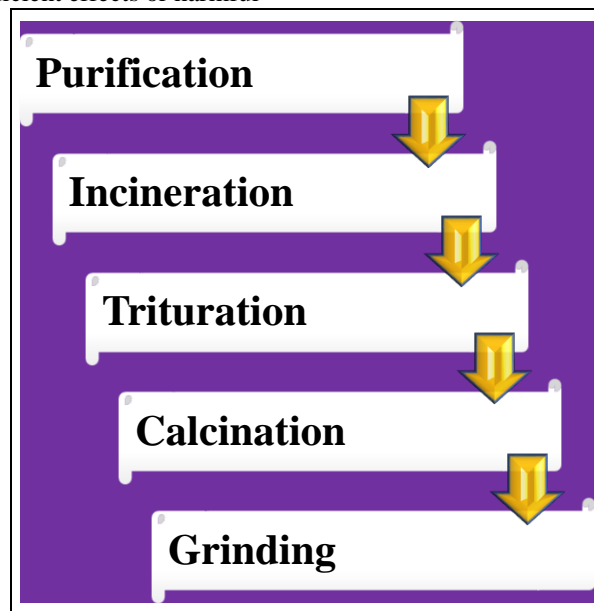
*Pottali Rasayana* involves mixing of *Kajjali* with specific ingredients which is tightly wrapped in a silk cloth to form a compact mass. The term *Pottali* make things compact, different techniques, including boiling in liquefied sulfur, incineration, and trituration, are used to prepare *Pottali* formulations.

Each of these unique preparatory techniques ensures that mercury-based formulations are safe, potent, and effective for therapeutic use. The processes of fabrication remove toxicity from the metals and standardized preparations techniques should always be followed, since failure to do so will lead to insufficient effects or harmful

consequences. The purification methods of *Rasashastra* render the potentially dangerous materials into the bioactive and therapeutically effective means required for the control of chronic disorders. (6-8)

### 3. General Steps Involve in the Preparation of *Rasa Aushadhis*

*Rasashastra* preparatory techniques include important methods that handle everything from the purification to the enhancement and the formulation of *Rasa Dravyas*. These preparatory techniques of *Rasashastra* are depicted in **Figure 1**.



**Figure 1.** Various Stages involve in the preparation of *Rasa Aushadhis*

As mentioned above the purification process is used to purifying and detoxifying metals and minerals with the aim of reducing impurities and thus increasing their therapeutic value:

- ✚ Incineration is the act of conversion of various metals and minerals into finely-divided, bioavailable drug, subject to operational heating.
- ✚ Trituration with liquid media, in this stage powdering is done using herbal decoctions repetitively in order to increase bioavailability.
- ✚ Calcination is the process of making metals and minerals more assimilable by virtue of converting them into absorbable forms.
- ✚ Grinding or Pounding is an important process of refining and blending herbal medicines so formulations made uniform as much as possible.

#### 4. Precautions during *Rasa Aushadhis* Preparations:

*Parad, Maakshika, Rajata, Gandhaka* and *Suvarna* are some constituents which are used in *Rasa Aushadhis*. Due to these additional precautions, toxicity may have to be avoided while preparing these drugs. The most important phase of the preparative method of *Rasa Ausadhis* is expert supervision, since a tiny error can ruin the medicinal property of the drug. The heating must be done carefully, as an additional increase in temperature may bring down the active ingredients' effectiveness. The

metals, minerals, and herbs must be authenticated to deter adulteration and damaging effects from similar adulterants. Quality parameters must be tested and quality evaluation should be undertaken after every stage of manufacturing to ensure in-process quality control. (7-10)

#### 5. Advantages of Various Techniques:

- ✓ Removal of physical and chemical impurities from metals and minerals to enhance their therapeutic efficacy.
- ✓ Converts non-compatible (toxic or heavy) metals and minerals into bioavailable and safe forms.
- ✓ Metals are soaked in liquid media to induce purification.
- ✓ Controlled heat removes toxic components.
- ✓ Reduces particle size and improving absorption.
- ✓ Metals and minerals become purified, detoxified, and therapeutically potent for medicinal formulations.

#### 6. Conclusion

*Rasashastra* is an essential component of Ayurveda that has a large number of theories about the preparation and use of herbo-metallic formulations. Such formulations, based on the principles of *Rasashastra*, make use of the medicinal value of metals, minerals, and gems. Methods

like *Sodhana* and *Marana*, which *Rasashastra* suggests, are used in preparing *Rasaushadhis*. These include processes of purification, mixing, grounding or crushing and powdering the mass, cooking or heating, burning/incinerating and grinding as in churning etc. *Rasa Shastra* techniques and steps further increase qualities of drug therapeutically. The preparatory techniques remove various physical and chemical impurities of metals and minerals to render them more clinically effective. These methods convert non-compatible, toxic metals or minerals into biological forms that may be used for therapeutic purpose.

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### Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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