

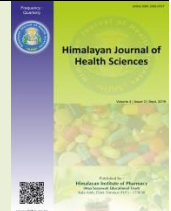


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Review Article

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Rasakalpa & Pottali Kalpana in Rasashastra and their Therapeutic Importance: An Ayurvedic Review

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Abstract

Indian medicine offers a broad range of special drug forms. Ayurvedic herbo-mineral remedies come in many types. These medicines aim to work well with small doses. *Rasakalpa* means herbo-mineral preparations in *Rasashastra*, which is a specialized branch of Ayurveda that focuses on metals and minerals and how to use them in medicine. *Pottali kalpana* stands out as a strong compact drug in Ayurveda. It contains mercury and sulfur mixed with plant stuff and shaped into a small form using natural glue. This review looks at the past, value, making, and use of *Rasakalpa* & *Pottali Kalpana*.

Keywords: Ayurveda, Rasakalpa, Pottali Kalpana, Rasashastra

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1. Introduction

Rasashastra studies how to use mercury and related things to heal. People like *Rasa kalpas* now and in the past because they need small doses, taste good, and fight diseases fast. *Rasashastra* looks at Indian alchemy, with mercury at its core. It adds sulfur to make mercury less harmful and more helpful for healing.

Rasakalpas are used due to their low dosage requirements easy administration, and quick therapeutic effects. Mercurial formulations come from *Samskarita Parada*, *Hingulotha Parada* and *Shuddha Parada*. These preparations fall into categories based on how they're made as mentioned in **Figure 1**. (1-4)

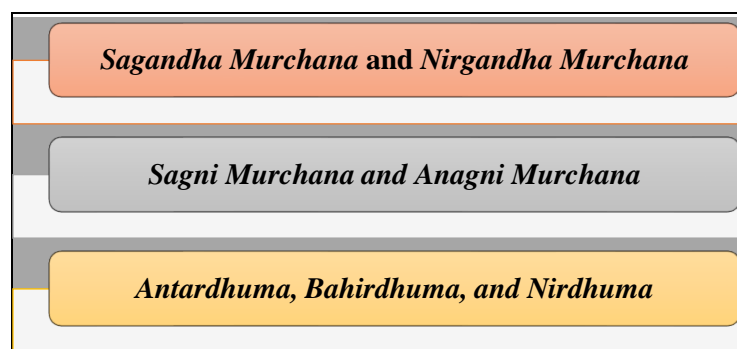


Figure 1. Different formulations based on their processing

As mentioned above *Sagandha Murchana* and *Nirgandha Murchana* are prepared with or without sulfur, *Sagni Murchana* and *Anagni Murchana* processed with or

without heat, *Antardhuma*, *Bahirdhuma* and *Nirdhuma* are formulations that make smoke during processing.

Parada stands out as the key ingredient among all *Rasa* products. However raw *Parada* can't serve as medicine. To boost its medicinal strength, people prepare *Parada* with various additives. *Rasakalpa* products fall into four groups based on how they're made. *Kharaleeya* Formulations created using *Khalva Yantra* where people grind purified mercury or its *Bhasma* with herbal and mineral ingredients. *Kupipakva* formulations come from *Kupi* and *Pakva*, *Rasa* and *Ayana*.

Parpati formulations are thin flake-like preparations made by heating a mix of metals, minerals and plant ingredients. These formulations are used to treat digestive and metabolic issues. *Pottali* formulations are concentrated and strong capsule-like preparations sealed and heated under controlled conditions to boost their healing power. (4-7)

2. Rasakalpa:

Rasakalpa means herbo-mineral preparations in *Rasashastra*, they are used to impart rejuvenating effect as *Rasayana* therapy. Based on what's in them and how they're made, *Rasakalpa* falls into different groups including *Rasa* preparations containing purified and processed *Parada*. *Gandhaka Kalpa*, includes sulfur and its preparation using plant and mineral preparations. *Lohakalpa* includes metals like *Swarna*, *Rajata* and *Tamra*. *Dhatu Kalpa* includes mineral-based preparations like *Abhraka*.

Table 1. Classification of *Pottali Kalpana*

Basis of Classification	Types of Pottali
Preparation Method (Nirmana Vidhi)	<i>Bhavana</i>
	<i>Putapaka</i>
	<i>Pottali Paka</i>
Appearance	<i>Rupavata</i>
	<i>Bhasmvata</i>
	<i>Conical shape</i>
According to Ingredients	<i>Pottali with Parada</i>
	<i>Pottali devoid of Parada</i>
	<i>Pottali with Gandhaka</i>
	<i>Pottali devoid of Gandhaka</i>
According to Agni Samskara	<i>Agneeskarahita</i>
	<i>Anagneeskaarha</i>

4. General Method of Preparation:

Poorva Karma includes; selection and purification of raw materials, followed by preparation of *Kajjali* and assembly arrangement of *Valuka Yantra*. In *Pradhana Karma*, *Pottali* is suspended in a *Valuka Yantra*, *Shuddha Gandhaka* is placed in a heated receiver and *Pottali* undergoes controlled heating, allowing the sulfur to melt and envelop the mixture. In *Paschat Karma* *Pottali* is allowed to cool, excess sulfur is removed and the mixture is polished. (8-10)

Examples of Pottali Formulations:

- *Ratnagarbha Pottali*
- *Sankhagarbha Pottali*
- *Taragarbha Pottali*
- *Vajra Pottali*

Benefits of Pottali Kalpana:

Examples of Rasakalpa

- ✓ *Ras Sindoor* is a *Kupipakva* preparation from the mercury and sulfur group, used for treating respiratory and digestive issues.
- ✓ *Makardhwaj* is known as *Vajikarana Rasayana* used for enhancing vitality and strength.
- ✓ *Swarnabhasma* is a gold-based formulation that supports immune function.
- ✓ *Abhrak Bhasma* is made from mica, considered beneficial for respiratory ailments.

3. Pottali Kalpana

Pottali Kalpana is a formulation that involves condensing or compacting medicinal substances into a small, highly concentrated form known as a *Pottali*. This method enhances potency while reducing the required dosages. Essentially, "*Pottali*" refers to the process of compacting and consolidating medicinal ingredients into an effective and stable form. The finely processed *Kajjali*, a mixture of purified mercury and sulfur, is applied to plant leaves shaped into squares or rectangles. These are then covered with cow dung cakes and heated at a controlled temperature of around 119°C. Once the *Kajjali* melts, another slab of the same material is placed on top. The classification of *Pottali Kalpana* is presented in **Table 1.** (6-8)

- ✚ Facilitates easier drug administration
- ✚ Highly effective in acute pathological conditions
- ✚ Long shelf life
- ✚ Rapid absorption and action with minimal dosage
- ✚ High bioavailability and enhanced therapeutic effectiveness

5. Quality Evaluation of Rasakalpa & Pottali Preparations:

- Identification of color, odor, shape, texture and taste.
- Testing of hardness and disintegration time.
- Moisture content analysis.
- Heavy metals analysis for toxicity detection.
- Advanced analytical methods using XRD and FTIR

6. Conclusion

Pottali Kalpana represents a unique and powerful formulation technique in Ayurveda, offering highly potent therapeutic effects with minimal dosage. Rooted in the principles of *Rasashastra*, these herbo-mineral preparations enhance bioavailability and provide rapid relief in various clinical conditions. With a well-structured preparation process, strict quality control, and historical significance, *Pottali* formulations continue to play a crucial role in Ayurvedic medicine. Their compact nature, long shelf life, and fast-acting properties make them an invaluable part of traditional healing practices.

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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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