

## THE SAGA OF POTTALI KALPANA

<sup>1</sup>PVNR. Prasad

<sup>2</sup>P.H.C. Murthy

<sup>1</sup>Ph.D. Scholar, Dr. NRS. Govt. Ayurvedic College, Vijayawada, A.P.

<sup>2</sup>Prof., H.O.D., P.G. Dept. of R.S. B.K.Dr. NRS. Govt. Ayurvedic College, Vijayawada, A.P.

### ABSTRACT :

*Pottali* is one of the *Parada yogas* with Mercury and Sulphur being the principle ingredients and is grouped under *Moorchita Parada Yoga*. It is a specialized pharmaceutical technique invented with the vision of compact in size, Convenience in preservation and ease in transportation. It has wide therapeutic applications as well as methods of preparation. The word *Pottali* has been used in Ayurvedic classical books for different purposes. *Pottali*, as a structure keeps resemblance with a pouch having some herbal or other drugs in it. Various *Pottali kalpas* have been mentioned and described in *Rasa Shastra* literature with variation in their shape, size, appearance, ingredients, method of preparation and therapeutic indications. *Pottali Rasayan* is a milestone in the history of Ayurvedic Emergency and Critical Care.

**Key words:** *Pottali; Bhavana; Putapaka; Varatika Poorana; Gandha Drava Paka*

**INTRODUCTION:** *Pottali kalpana* is a variety of *Murcchita Parada Yoga* in a consolidated form. It was invented with a vision of compact & comprehensive size & shape, convenience in preserving, easy transportation and its efficacy in treatment of emergency conditions with a minimum of dosage. It has wide therapeutic applications and methods of preparation.

As per the nomenclature, the name *Pottali* denotes a bag. Because this preparation is made in a *pottali* and the shape of the medicine resembles a bag, it is called *Pottali*. The drug which is prepared by giving compactness to the scattered raw material is termed *Pottali*.<sup>1</sup> The *Pottali rasayan* is one among the mercurial compounds processed with the help of Sulphur. The word *Pottali* has been used in Ayurvedic classical books for different purposes. *Pottali*, as a structure keeps resemblance with a pouch having some herbal or other drugs in it. But from the point of view of *Rasa Shastra*, *Pottali Kalpana* should be considered as separate *Kalpana* of Metallo-Mineral drugs evolved in order to keep multiple scattered compo-

nents into a compactly processed form. In ancient time, the physicians attending the patients were supposed to carry the medicine in the containers and during transportation, the medicine usually destroyed due to breakage of containers. Therefore there was a need of a form of medicine which is as effective as other forms, and it should be convenient to carry with no danger of destruction.<sup>2</sup> So the *Pottali kalpana* came into existence in which the medicine were hard and in solid form, where the Physicians used to carry the *Pottalis* with them comfortably and were able to administer it when and wherever required. Enhancement of properties of *Pottali kalpana* was an additional achievement in the process of formation of *Pottali*.

Even though *Pottali kalpana* is a rare, unique, potent, time tested, novel molecule and clinically proved to be good, it is not freely available in the market owing to its complexity in preparation procedure and as a result of this, its usage has been relegated to oblivion. Keeping the said facts in view, an attempt has been made to unravel the lost glory of this novel

medicine.

**DEFINITION:** *Pottali* = concise; minimize; compact

Word *Pottali* means to minimize, to concise and to make compact. It can be defined as to collect scattered materials in to compact and comprehensive size. Otherwise the *kalpana* or the processing which give compactness to scattered materials is defined as *Pottali kalpana*.<sup>3</sup> The definition of word *Pottali* suggest the meaning of to concise, to compact or to minimize a substance making it into a bundle, pocket or to put different substances into a bundle or pocket which resembles the process similar that of *Pottali kalpana*.

**HISTORY:** Reference of *Pottali* preparations is un-available in Vedic literature. In *Brihatrayee*, the term of *Pottali* is used with reference to *Swedana*, *Avapeedana* *Nasya* etc.<sup>4, 5, 6, 7</sup> but reference for *pottali* preparations is not available. The first reference of *Pottali Kalpana* is found in 12<sup>th</sup> century *Rasa Shastra* text book *Rasa Ratnakara* and it was explained in *Putapaka Vidhi*.<sup>8</sup> *Rasa Prakasa Sudhakara* of 13<sup>th</sup> century has mentioned the preparation of *pottali Kalpana* by *Gandhaka Drava Paka* in the context of *Vajra Pottali*.<sup>9</sup> The author of *Yoga Ratnakara* of 18<sup>th</sup> century has mentioned *Gandhaka Drava Paka* in an Iron vessel.<sup>10</sup> *Rasa Shastra* works of 18<sup>th</sup> & 19<sup>th</sup> century has extensively quoted different *Pottali Kalpa*.

The author of *Rasendra Sara Sangraha* has added 5 new *Pottali* formulations during 20<sup>th</sup> century.<sup>11</sup> Texts like *Brihat Rasaraja Sundara*,<sup>12</sup> *Rasa Yoga Sagara* and *Siddha Prayoga Sangraha* etc. have compiled many new *Pottali yogas*. *Rasa Yoga Sagara* has compiled maximum number of *Pottali yogas* under the chapter 'Pottali Rahasyam'.<sup>13</sup>

In *Rasa Raja Sundara*, the preparation procedures of 3 *pottali* were given. They are *Hamsa Pottali*, *Ratnagarbha Pottali* and *Nrisimha Pottali*. The first two *pottali kalpanas* were described as in the previous texts. But *Nrisimha pottali* might be a primary contribution of this author. *Vaikrantagarbha Pottali* which was mentioned in *Rasa Raja Siromani* was a modification of *Nrisimha Pottali*. In *Rasa Raja Shankar Seven Pottali kalpanas* were described. *Mukta garbha Pottali* is a special contribution of the book *Rasa Raja Shankar*. Books like *Rasa Prabodha Chandrodaya*, *Rasa Pradipika*, *Bhaishajya Saramrit*, *Rasa Raja Parijata*, *Chikitsa Rahasya*, *Chikitsabharan*, *Yoga Maharnav*, *Chikitsakrama Kalpavalli* etc also mentioned *pottali kalpanas* but they were copied from the earlier works. Ten types of *pottali kalpanas* were mentioned in *Rasayana Sara Sangraha*. Five out of these ten were taken from the earlier books, while the other five were of his own contribution.

Even before *Rasayan Sara* which was a work of 20<sup>th</sup> century, the *pottali kalpanas* were described in many of the books. Of these, *Bharat Bhaishajya Ratnakar (unjha)*, *Rasayoga Sagara*, *Siddha Bhaishajya Manjusha*, *Ras Tantra Sara Va Siddha Prayoga Sangraha*, *Rasaamritam* are some of the books where *pottali kalpanas* were mentioned<sup>14</sup>.

Most number of *kalpanas* can be found in *Rasa Yoga Sagara*. The importance of *pottali kalpanas* of *Rasa Yoga Sagara* is that, the procedures were modified and suits the present day conditions. These *kalpanas* were a result of the contribution of eminent scholars and experienced *Vaidyas*. The book called *Rasamritam* which was written by *Ayurveda Martanda Vaidyaratji Shri Yadavji Trikamji Acharya* con-

tains a *pottali kalpana* called *Hemagarbha Pottali Ras*<sup>15</sup>. This procedure in this book is considered to be the best one.

### SIGNIFICANCE:

1. In older days Physicians used to keep medicines in glass vessels or mud vessels and there was every chance of breakage of vessels and the medicine becoming waste through spilling. In the case of *Pottali*, there is no chance of wastage even after the breakage of vessel because of its hard constituency.
2. These *kalpanas* are the best examples for *Sagandha Rasa yogas*.
3. *Pottali* medicine has easy and quick absorption due to their sub-lingual administration.
4. These drugs can be administered in case of unconscious patients also.

5. It is also easier to administer for children.

6. It is one of those preparations of *Rasa yogas* which take short time and little equipment to prepare the final medicine.

### ADVANTAGES:

1. Compactness ,2. Portability
3. Palatability ,4. Easy to dispense
5. Longer shelf-life
6. Faster absorption due to sub-lingual administration
7. Quicker therapeutic effect
8. Shorter time & minimal equipment for preparation
9. Easy administration to all categories of patients from *Paediatrics to Geriatrics* and also in patients with terminal illness.

### NUMBER OF POTTALI KALPAS MENTIONED IN RASA SHASTRA LITERATURE

S. No.	Name of the text	Period(cent.A.D.)	No. of Yogas Mentioned
1.	Rasa Ratnakara	12 <sup>th</sup> Cent.	02
2.	Rasendra Sangraha	13 <sup>th</sup> Cent.	05
3.	Rasa Prakasa Sudhakara	13 <sup>th</sup> Cent.	07
4.	Rasa Ratna Samucchaya	14 <sup>th</sup> Cent.	06
5.	Rasendra Chudamani	14 <sup>th</sup> Cent.	03
6.	Rasa Chintamani	14 <sup>th</sup> Cent.	05
7.	Rasa Kankaliya	14 <sup>th</sup> Cent.	05
8.	Rasaavataara	14 <sup>th</sup> Cent.	03
9.	Sarngadhara Samhita	14 <sup>th</sup> Cent.	03
10.	Rasa Kaumudi	16 <sup>th</sup> Cent.	02
11.	Rasa Kamadhenu	17 <sup>th</sup> Cent.	08
12.	Yoga Ratnakara	18 <sup>th</sup> Cent.	06
13.	Bhaishajya Ratnavali	18 <sup>th</sup> Cent.	05
14.	Brihatyoga Tarangini	18 <sup>th</sup> Cent.	02
15.	Nighantu Ratnakara	19 <sup>th</sup> Cent.	07
16.	Rasayana Sangrha	19 <sup>th</sup> Cent.	05
17.	Siddha Bheshaja manimala	19 <sup>th</sup> Cent.	03
18.	Rasa Chandanshu	19 <sup>th</sup> Cent.	06
19.	Rasaraja Shankar	19 <sup>th</sup> Cent	07
20.	Brihat Rasaraja Sundara	19 <sup>th</sup> Cent	03
21.	Rasayana Saara Sangraha	19 <sup>th</sup> Cent	10
22.	Rasayana Saara	20 <sup>th</sup> Cent.	03
23.	Rasayoga Saagara	20 <sup>th</sup> Cent.	23

**CLASSIFICATION:** Various *Pottali kalpas* have been mentioned and described in *Rasa Shastra* literature with variation in their shape, size, appearance, ingredients, method of preparation and therapeutic indications. The basic classification of *Pottali kalpa* has been depicted in the following charts.

**DIFFERENT METHODS OF PREPARATION OF POTTALI KALPA:** All *Pottali* preparation are not made in one particular method, some are prepared by boiling a midst liquefied Sulphur, while some are processed through incineration and some more with *Bhavana vidhi* (trituration). The classics of *Rasa Shastra* have mentioned a variety of processing methods in the preparation of *Pottali kalpa* and of those the following four methods stand out prominently<sup>16</sup>

1. *Bhavana* method (09)
2. *Putpaka* method (60)
3. *Varatika purana* method (19)
4. *Gandhaka drava paka* method (31)
5. Other methods (10)

The method of boiling amidst molten Sulphur was introduced by *Yashodhara* in the context of *Vajra Pottali*

in around 13<sup>th</sup> cent. The author of *Yogaratnakara* of 18<sup>th</sup> century described the method of preparing *Hemagarbha Pottali* by boiling in molten Sulphur. Krishna Rama Bhatta, the author of *Siddha Bheshaja Manimala*, has also adopted the same technique for this compound. The further writers have preferred this method for the compounds given by the previous authors wherever it is possible.

**I. BHAVANA METHOD<sup>17</sup>:** In this method, the ingredients are triturated with the prescribed liquid media in a *Khalwa Yantra* (Mortar & Pestle) for a specific period of time. The process of *bhavana* is to be continued till the final product attains viscous and semi-solid state. Juices or decoctions of different drugs specified for the particular formulae depending on the indication are used as a liquid media for the purpose of trituration. The pulp of *Kumari* is used as media for triturating where ever the specific media is not mentioned. Later on the final product is rolled into pills of recommended dose or dried and stored in powder form. This method of preparation is equal to other *Khalwiya Rasayanas*.

#### **POTTALI KALPA PREPARED THROUGH BHAVANA METHOD**

S. No.	POTTALI KALPA	REFERENCE	PERIOD
1.	Hemagarbha Pottali	Rasendra Sangraha	13 <sup>th</sup> Cent.
2.	Hamsa Pottali	Rasendra Sangraha	13 <sup>th</sup> Cent.
3.	Gandhaka marda Pottali – 1	Rasa Ratna Samucchaya	14 <sup>th</sup> Cent.
4.	Gandhaka marda Pottali – 2	Rasa Ratna Samucchaya	14 <sup>th</sup> Cent.
5.	Hamsa Pottali	Rasendra Chudamani	14 <sup>th</sup> Cent.
6.	Hamsa Pottali	Rasayana Sangraha	19 <sup>th</sup> Cent.
7.	Hamsa Pottali	Rasayoga saagara	20 <sup>th</sup> Cent.
8.	Gandhakadi Pottali rasa	Rasayoga saagara	20 <sup>th</sup> Cent.
9.	Rasagarbha Pottali - 3	Rasayoga saagara	20 <sup>th</sup> Cent.

**II. PUTAPAKA METHOD<sup>18</sup>:** It is a specialized technique in *Rasa Shastra* where the drugs of metallic, mineral and animal origin are reduced to fine ashes

through oxidation by subjecting them to appropriate quantum of heat repeatedly so that the substance loses its original shape, colour, texture and luster etc.

This is the popular method of preparing *Pottali kalpa*. In this procedure, the ingredients are triturated with fresh juices of *Nagavalli* (*Piper betel*), *Dattura* (*Datura stramonium*), *Kumari* (*Aloe vera*), *Nimbu* (*Citrus acida*), *Nirgundi* (*Vitex negundo*), *Jayanti* (*Sesbania sesban*) or *Chitrmula* (roots of *Plumbago zeylanica*) decoction etc. and subjected incineration to obtain the final product which is usually in the form of *Bhasma*.

In *Rasayoga Sagara*, *Divya jala* has been mentioned as *Bhavana dravya* to make the *Pottali* very hard and glossy. *Siddha Sampradaya* mentions the usage of white portion of *Krishna-Kukkutanda* to increase the potency of *Pottali*. The type of *puta* varies from *Kukkuta puta* to *Gaja puta* and the duration from one *yama* (3 Hrs.) to Three days depending on the nature of the ingredients used as raw material.

### **POTTALI KALPA PREPARED THROUGH PUTAPAKA METHOD**

S. No.	POTTALI KALPA	REFERENCE	PERIOD
1.	Ratnagarbha Pottali	Rasa Ratnakara	12 <sup>th</sup> Cent.
2.	Sankhagarbha Pottali	Rasa Ratnakara	12 <sup>th</sup> Cent.
3.	Taaragarbha Pottali (vartika)	Rasendra Sangraha	13 <sup>th</sup> Cent.
4.	Lokeshwera Pottali	Rasendra Sangraha	13 <sup>th</sup> Cent.
5.	Grahani kapharda Pottali	Rasendra Sangraha	13 <sup>th</sup> Cent.
6.	Mrigaanka Pottali	Rasa Prakaasa Sudhakara	13 <sup>th</sup> Cent.
7.	Raja Mrigaanka Pottali	Rasa Prakaasa Sudhakara	13 <sup>th</sup> Cent.
8.	Hemagarbha Pottali-1 (Bhudara)	Rasa Prakaasa Sudhakara	13 <sup>th</sup> Cent.
9.	Hemagarbha Pottali-2 (Gaja Puta)	Rasa Prakaasa Sudhakara	13 <sup>th</sup> Cent.
10.	Mrigaanka Pottali	Rasa Ratna Samucchaya	14 <sup>th</sup> Cent.
11.	Pottali Rasa	Rasa Ratna Samucchaya	14 <sup>th</sup> Cent.
12.	Visesha Varna Pottali	Rasa Ratna Samucchaya	14 <sup>th</sup> Cent.
13.	Hemagarbha Pottali (vartika, Gaja Puta)	Rasa Ratna Samucchaya	14 <sup>th</sup> Cent.
14.	Ratnagarbha Pottali	Rasendra Chudamani	14 <sup>th</sup> Cent.
15.	Lokesh Pottali	Rasa Chintamani	14 <sup>th</sup> Cent.
16.	Laghu Pottali	Rasa Chintamani	14 <sup>th</sup> Cent.
17.	Kanchana Pottali	Rasa Chintamani	14 <sup>th</sup> Cent.
18.	Shankha Pottali	Rasa Chintamani	14 <sup>th</sup> Cent.
19.	Hiranyagarbha Pottali	Rasa Chintamani	14 <sup>th</sup> Cent.
20.	Kanka Pottali Rasa	Rasa Kankaliya	14 <sup>th</sup> Cent.
21.	Mrigaanka Pottali	Rasa Kankaliya	14 <sup>th</sup> Cent.
22.	Lokanatha Pottali	Rasa Kankaliya	14 <sup>th</sup> Cent.
23.	Shankhagarbha Pottali	Rasa Kankaliya	14 <sup>th</sup> Cent.
24.	Hiranyagarbha Pottali	Rasa Kankaliya	14 <sup>th</sup> Cent.
25.	Mrigaanka Pottali	Rasaavataara	14 <sup>th</sup> Cent.
26.	Ratnagarbha Pottali	Rasaavataara	14 <sup>th</sup> Cent.
27.	Lokanatha Pottali	Rasaavataara	14 <sup>th</sup> Cent.
28.	Mrigaanka Pottali	Sarngadhara Samhitha	14 <sup>th</sup> Cent.
29.	Ratnagarbha Pottali	Rasa Kaumudi	16 <sup>th</sup> Cent.

30.	Shankhagarbha Pottali	Rasa Kaumudi	16 <sup>th</sup> Cent.
31.	Ratnagarbha Pottali	Rasa Kamadhenu	17 <sup>th</sup> Cent.
32.	Mrigaanka Pottali	Rasa Kamadhenu	17 <sup>th</sup> Cent.
33.	Hiranyagarbha Pottali	Rasa Kamadhenu	17 <sup>th</sup> Cent.
34.	Hemagarbha – 1	Rasa Kamadhenu	17 <sup>th</sup> Cent.
35.	Hemagarbha – 2	Rasa Kamadhenu	17 <sup>th</sup> Cent.
36.	Lokeshwera Pottali	Rasa Kamadhenu	17 <sup>th</sup> Cent.
37.	Lokanath Pottali	Rasa Kamadhenu	17 <sup>th</sup> Cent.
38.	Shankhagarbha Pottali	Rasa Kamadhenu	17 <sup>th</sup> Cent.
39.	Ratnagarbha Pottali (Gaja Puta)	Yoga Ratnakara	18 <sup>th</sup> Cent.
40.	Lokeshwer Pottali (Varaha Puta)	Yoga Ratnakara	18 <sup>th</sup> Cent.
41.	Hemagarbha – 1 (Gaja Puta)	Yoga Ratnakara	18 <sup>th</sup> Cent.
42.	Hamsagarbha Pottali	Bhaishajya Ratnavali	18 <sup>th</sup> Cent.
43.	Hiranyagarbha Pottali	Bhaishajya Ratnavali	18 <sup>th</sup> Cent.
44.	Ratnagarbha Pottali	Bihatyoga Tarangini	18 <sup>th</sup> Cent.
45.	Mrigaanka Pottali	Nighantu Ratnakara	19 <sup>th</sup> Cent.
46.	Ratnagarbha Pottali	Nighantu Ratnakara	19 <sup>th</sup> Cent.
47.	Mrigaanka Pottali	Rasaayana Sangraha	19 <sup>th</sup> Cent.
48.	Shankhagarbha Pottali	Rasayoga Saagara	20 <sup>th</sup> Cent.
49.	Lokanath Pottali	Rasayoga Saagara	20 <sup>th</sup> Cent.
50.	Lokeshwer Pottali	Rasayoga Saagara	20 <sup>th</sup> Cent.
51.	Rasagarbha Pottali - 1	Rasayoga Saagara	20 <sup>th</sup> Cent.
52.	Rasagarbha Pottali – 2	Rasayoga Saagara	20 <sup>th</sup> Cent.
53.	Rasagarbha Pottali – 3	Rasayoga Saagara	20 <sup>th</sup> Cent.
54.	Rasagarbha Pottali - 4	Rasayoga Saagara	20 <sup>th</sup> Cent.
55.	Hemagarbha Pottali – 1 (Bhudara Puta)	Rasayoga Saagara	20 <sup>th</sup> Cent.
56.	Hemagarbha Pottali – 6	Rasayoga Saagara	20 <sup>th</sup> Cent.
57.	Hemagarbha Pottali – 10	Rasayoga Saagara	20 <sup>th</sup> Cent.
58.	Hiranyagarbha Pottali (Gaja Puta)	Rasayoga Saagara	20 <sup>th</sup> Cent.
59.	Shankhagarbha Pottali (Bhudara Puta)	Rasayoga Saagara	20 <sup>th</sup> Cent.
60.	Panchamrita Pottali (Laghu Puta)	Rasayoga Saagara	20 <sup>th</sup> Cent.

### III. VARATIKA / SANKHA PURANA

**METHOD<sup>19</sup>:** This is a special technique, where all the ingredients after thorough processing, are filled into a *Varatika* (Cowry – shell) or *Sankha* (Conch – Shell). The groove or opening of the shell is closed and sealed with the paste made up of mixing *Tankana* (Borax) in either

*Go-Mutra* / *Go – Dugdha* (Cow's Urine / Milk) and the filled in shells are subjected to *Puta*. On cooling, the final product is finely powdered and stored. Similarly, *Musha* (crucible) prepared of *Sankhanabhi Bhasma* and *Go-dugdha* is also used for incineration.

### POTTALI KALPA PREPARED THROUGH VARATIKA POORANA METHOD

S. No.	POTTALI KALPA	REFERENCE	PERIOD
1.	Hemagarbha Pottali - 1	Sarngadhara Samhitha	14 <sup>th</sup> Cent.

2.	Hemagarbha Pottali - 2	Sarngadhara Samhitha	14 <sup>th</sup> Cent.
3.	Ratnagarbha Pottali	Bhaishajya Ratnaavalī	18 <sup>th</sup> Cent.
4.	Likeshwera Pottali	Bhaishajya Ratnaavalī	18 <sup>th</sup> Cent.
5.	Hemagarbha Pottali	Bhaishajya Ratnaavalī	18 <sup>th</sup> Cent.
6.	Lokeshwera Pottali	Brihatyoga Tarangini	18 <sup>th</sup> Cent.
7.	Lokanath Pottali	Nighantu Ratnakara	19 <sup>th</sup> Cent.
8.	Shankhagarbha Pottali – 1	Nighantu Ratnakara	19 <sup>th</sup> Cent.
9.	Shankhagarbha Pottali - 2	Nighantu Ratnakara	19 <sup>th</sup> Cent.
10.	Hemagarbha Pottali - 1	Nighantu Ratnakara	19 <sup>th</sup> Cent.
11.	Hemagarbha Pottali – 2	Nighantu Ratnakara	19 <sup>th</sup> Cent.
12.	Ratnagarbha Pottali	Rasaayana Sangraha	19 <sup>th</sup> Cent.
13.	Hemagarbha Pottali	Rasayoga Saagara	20 <sup>th</sup> Cent.
14.	Ratnagarbha Pottali	Rasayoga Saagara	20 <sup>th</sup> Cent.
15.	Narasimha Pottali Rasa	Rasayoga Saagara	20 <sup>th</sup> Cent.
16.	Kanka Pottali	Rasayoga Saagara	20 <sup>th</sup> Cent.
17.	Kashyapa Pottali rasa	Rasayoga Saagara	20 <sup>th</sup> Cent.
18.	Muktagarbha Pottali	Rasayoga Saagara	20 <sup>th</sup> Cent.
19.	Vajragarbha Pottali	Rasayoga Saagara	20 <sup>th</sup> Cent.

#### IV. GANDHAKA DRAVA PAKA

**METHOD<sup>20</sup>:** This method was first introduced by Yashodhara in 13<sup>th</sup> Century in his work *Rasa Prakasa Sudhakara* in the context of *Vajra Pottali*. Though not that

popular when compared to that of *Putapaka* method, *Gandhaka Drava Paka* method is considered to be the best one in the preparation of *Pottali kalpa* due to its high therapeutic efficacy.

#### POTTALI KALPA PREPARED THROUGH GANDHAKA DRAVA PAKA METHOD

S. No.	POTTALI KALPA	REFERENCE	PERIOD
1.	Vajra Pottali	Rasa Prakaasa Sudhaakara	13 <sup>th</sup> Cent.
2.	Hiranyagarbha Pottali	Rasendra Chintamani	16 <sup>th</sup> Cent.
3.	Hemagarbha – 4	Yoga ratnaakara	18 <sup>th</sup> Cent.
4.	Hemagarbha Pottali – IV	Yoga Ratnaakara	18 <sup>th</sup> Cent.
5.	Hemagarbha Pottali	Siddha Bheshaja Manimala	19 <sup>th</sup> Cent.
6.	Hemagarbha Pottali - III	Rasa Chandamshu	19 <sup>th</sup> Cent.
7.	Swarnagarbha Pottali	Rasaayana Saara	20 <sup>th</sup> Cent.
8.	Vaikranta Pottali Rasa	Rasayoga Saagara	20 <sup>th</sup> Cent.
9.	Hemagarbha Pottali – 2	Rasayoga Saagara	20 <sup>th</sup> Cent.
10.	Hemagarbha Pottali – 3	Rasayoga Saagara	20 <sup>th</sup> Cent.
11.	Hemagarbha Pottali – 4	Rasayoga Saagara	20 <sup>th</sup> Cent.
12.	Hemagarbha Pottali – 5	Rasayoga Saagara	20 <sup>th</sup> Cent.
13.	Hemagarbha Pottali – 7	Rasayoga Saagara	20 <sup>th</sup> Cent.
14.	Hemagarbha Pottali – 8	Rasayoga Saagara	20 <sup>th</sup> Cent.
15.	Hemagarbha Pottali – 9	Rasayoga Saagara	20 <sup>th</sup> Cent.
16.	Hemagarbha Pottali – 11	Rasayoga Saagara	20 <sup>th</sup> Cent.
17.	Hemagarbha Pottali – 12	Rasayoga Saagara	20 <sup>th</sup> Cent.

18.	Hemagarbha Pottali – 13	Rasayoga Saagara	20 <sup>th</sup> Cent.
19.	Taraagarbha Pottali	Rasayoga Saagara	20 <sup>th</sup> Cent.
20.	Tamragarbha Pottali	Rasayoga Saagara	20 <sup>th</sup> Cent.
21.	Lohagarbha Pottali - 1	Rasayoga Saagara	20 <sup>th</sup> Cent.
22.	Lohagarbha Pottali – 2	Rasayoga Saagara	20 <sup>th</sup> Cent.
23.	Mallagarbha Pottali	Rasayoga Saagara	20 <sup>th</sup> Cent.
24.	Talaagarbha Pottali	Rasayoga Saagara	20 <sup>th</sup> Cent.
25.	Shilagarbha Pottali	Rasayoga Saagara	20 <sup>th</sup> Cent.
26.	Vishagarbha Pottali	Rasayoga Saagara	20 <sup>th</sup> Cent.
27.	Tridhatugarbha Pottali	Rasayoga Saagara	20 <sup>th</sup> Cent.
28.	Ratnagarbha Pottali	Rasayoga Saagara	20 <sup>th</sup> Cent.
29.	Abhragarbha Pottali	Rasayoga Saagara	20 <sup>th</sup> Cent.
30.	Makshikagarbha Pottali	Rasayoga Saagara	20 <sup>th</sup> Cent.
31.	Pravalagarbha Pottali	Rasayoga Saagara	20 <sup>th</sup> Cent.

### POTTALI KALPA PREPARED THROUGH OTHER METHODS

S. No	POTTALI KALPA	METHOD	REFERENCE	PERIOD
1.	Loknath Pottali	By only Mercury & Sulphur	Rasa Prakasa Sudhakara	13 <sup>th</sup> Cent.
2.	Rasa Pottali	By only Mercury & Sulphur	Rasa Prakasa Sudhakara	13 <sup>th</sup> Cent.
3.	Hemagarbha – 2	Sikatha Yantra Paka	Yoga Ratnakara	18 <sup>th</sup> Cent.
4.	Hemagarbha – 3	Paka in Bhugarta	Yoga Ratnakara	18 <sup>th</sup> Cent.
5.	Reto Rodhana Pottali	Swedana in Dugdha	Siddha Bheshaja Manimala	19 <sup>th</sup> Cent.
6.	Netra Pottali	Powdered & tied into Pottali	Siddha Bheshaja Manimala	19 <sup>th</sup> Cent.
7.	Reto Rodhana Pottali	Swedana in Dugdha	Rasayoga Sara	20 <sup>th</sup> Cent.
8.	Kapharda Pottali Ras	Lavana Yantra Paka	Rasayoga Sara	20 <sup>th</sup> Cent.
9.	Mriganka Pottali	Lavana Yantra Paka	Rasayoga Sara	20 <sup>th</sup> Cent.
10.	Hemagarbha Pottali - 14	Gandhaka Taila Paka	Rasayoga Sara	20 <sup>th</sup> Cent.

In all these four methods, final product differs in shape, consistency etc. but they all are included in *Pottali kalpana*. Maximum number of references found in classics belongs to *Putpaka* method but *Gandhaka drava paka* method is more popular because of its increased efficacy, compact shape and easy method of administration to provide quick absorption of medicine.

**EXCEPTIONS:** As per the definition, the *pottali* is the drug that is prepared by giving compactness to the scattered material

through a specialized pharmaceutical technique, but contrary to this definition, there are certain formulations mentioned in *Rasa Shastra* works which defy the definition. The method of preparation for these resembles that of *Pottali kalpana* but they are not considered and placed under *Pottali* group of drugs.

- Both *Hamsa Pottali Ras* and *Agnikumara Ras* are prepared in similar lines but *Agnikumara Ras* is not included under *Pottali* group.

- *Hemagarbha Pottali* and *Maha Hemagarbha Ras* resemble each other in terms of Ingredients and preparation method. But, *Maha Hemagarbha Ras* is not included under *Pottali* group of drugs.
- *Karsha Pottali* and *Lokanath Ras* also have similar composition and share same pharmaceutical technique. But *Lokanath Ras* is not considered as a *Pottali Kalpa*.

**Dosage:** The exact dosage of *Pottali* is not mentioned in any of the *Rasa Shastra* literature. It differs from  $\frac{1}{2}$  to 4 ratthies from one *Pottali yoga* to other.<sup>21</sup>

**Method of Administration:** It is usually administered by rubbing over stone for desired number of rotations with the juices of Ginger, stalks of *Piper betel*, honey or ghee either sub-lingually or orally.<sup>22,23</sup> The number of rotations are to be decided by the physician according to the nature, severity of the disease and age of the patient.

**Pathya:** *Ghrita; Dadhi; Shali Dhanya* and *Shaka sevana*<sup>24</sup>

**Apopathy:** *Amla Dravya; Taila; Bilwa; Vrintaka; Kanji; Kakarashtaka Gana; Hingu; Ratri Jagarana; Krodha; Vyavaya*<sup>25</sup>;

**DISCUSSION:** *Pottali kalpana* can be understood as a specific pharmaceutical technique intended for keeping different constituents in their purified, processed and incinerated form into a unique complex formula. It designed to achieve the better therapeutic efficacy by its special method of preparation which potentiate and stabilize the bonding between its ingredients. The medicinal properties of *Pottali* were enhanced by the process of its preparation and it was an additional achievement.

**CONCLUSION:** *Pottali kalpana* is an unexplored sector of *Rasa Shastra* with more potent therapeutic efficacy. It was consid-

ered as a medicine which gives quick response even in emergency situations. It is unique in terms of its preparation, mode of administration, action, and transportation. It has also got most promising clinical indications. Even the dosage is least when compared to other *Rasa Yogas*. Prepared in different shapes, methods to suit different therapeutic indications, *Pottali kalpana* should be looked at as an advanced pharmaceutical technique of *Rasa Shastra* designed to enhance the shelf-life, therapeutic efficacy and safety of *Bhasmas*. *Pottali Rasayan* is a milestone in the history of Ayurvedic Emergency and Critical Care.

#### REFERENCES:

1. Bahadura RR, Shabdakalpadruma, Vol – III, Nag Publishers, Delhi, 1987
2. Pt. Shyamasundaracharya, Rasayana Sara, Chikitsa Prakaran,113, Chowkhamba Krishnadas Academy, Varanasi, 2014
3. Dvivedi VM. Parada Vijnaniyam, 10<sup>th</sup> chapter, I edition, Shri Sharma Ayurveda Mandir, Datiya,1997
4. Agnivesha, Charaka Samhita, Hindi Vidyotini commentary by Pt. kashinath Pandey & Dr. Gorakanath Chaturvedi, I edition, Chaukhamba Vidya Bhavan, Varanasi, 1962
5. Pt. Shyamasundaracharya, Rasayana Sara, Chikitsa Prakaran,113, Chowkhamba Krishnadas Academy, Varanasi, 2014
6. Maharsi Sushruta, Sushruta Samhita Uttara Tantra with Nibandha Sangraha Commentary of Shri Dalhana, Chowkhamba Orientalia, Varanasi, 2005
7. Srimad Vaghbata Virachita Ashtanga Hridaya with Nirmala Hindi Commentary, by Dr. Brahmanand Tripathi, Uttara Sthana, Chowkhamba Sanskrit Pratishtan, Delhi, Revised edition, 2007.

8. Nityanadha Siddha, Rasa Ratnakara with Rasa Chandrika Commentary by Lala Shalagramji, Khemraj Sri Krishnadas Prakashan, Mumbai, 2013.

9. Acharya Yashodhara, Rasa Prakasha Sudhakara, with Siddhiprada Hindi Commentary by Siddinandan Mishra, 2<sup>nd</sup> edition, Chowkhamba Orientalia, Varanasi, 1998

10. Vaidya Lakshmi pathi Shastri, Yoga Ratnakara, Chowkhamba Sanskrit Sansthan, Varanasi, 1997.

11. Shri Gopala Krishna virachita Rasendra Sara Sangraha, English translation and edited by Dr. Ashoka. D. Satpute, I edition, Chaokhmaba Krishnadas Academy Publications, Varanasi, 2003

12. Pt. Dattarama Choube, Brihat Rasaraja Sundara, 3<sup>rd</sup> edition, Chowkhamba Orientalia, Varanasi, 2000.

13. Pt. Hari Prapannaji, Rasa Yoga Sagara, 2<sup>nd</sup> Volume, Krishnadas Academy, Varanasi, 1998.

14. Dvivedi VM. Parada Vijnaniyam, 10<sup>th</sup> chapter, I edition, Shri Sharma Ayurveda Mandir, Datiya, 1997

15. Acharya Yadavji Trikamji, Rasamritam, English translation and edited by Dr. Damodar Joshi, 2<sup>nd</sup> edition, Chowkhamba Sanskrit Bhavan Publications, Varanasi, 2003

16. Dvivedi VM. Parada Vijnaniyam, 10<sup>th</sup> chapter, I edition, Shri Sharma Ayurveda Mandir, Datiya, 1997

17. Sri Vaghbatacharya, Rasa Ratna Samucchaya, edited by Shri Dharmanandana Sharma, Motilal Banarsi Das, Varanasi, 2<sup>nd</sup> edition – 1996

18. Acharya Yashodhara, Rasa Prakasha Sudhakara, Commentary by Siddinandan Mishra, Chowkhamba Orientalia, Varanasi, 2<sup>nd</sup> edition, 1998

19. Govinda Dasa, Bhaishajya Ratnavali, edited by Ambica Datta Shastri, Chaukhamba Sanskrit Sansthan, Varanasi, 2005

20. Pt. Shyamasundaracharya, Rasayana Sara, Chikitsa Prakaran, 113, Chowkhamba Krishnadas Academy, Varanasi, 2014

21. Acharya Yadavji Trikamji, Rasamritam, English translation and edited by Dr. Damodar Joshi, 2<sup>nd</sup> edition, Chowkhamba Sanskrit Bhavan Publications, Varanasi, 2003

22. Sri Vaghbatacharya, Rasa Ratna Samucchaya, edited by Shri Dharmanandana Sharma, Motilal Banarsi Das, Varanasi, 2<sup>nd</sup> edition – 1996

23. Acharya Yadavji Trikamji, Rasamritam, English translation and edited by Dr. Damodar Joshi, 2<sup>nd</sup> edition, Chowkhamba Sanskrit Bhavan Publications, Varanasi, 2003

24. Nityanadha Siddha, Rasa Ratnakara with Rasa Chandrika Commentary by Lala Shalagramji, Khemraj Sri Krishnadas Prakashan, Mumbai, 2013.

25. Nityanadha Siddha, Rasa Ratnakara with Rasa Chandrika Commentary by Lala Shalagramji, Khemraj Sri Krishnadas Prakashan, Mumbai, 2013.

---

**Corresponding Author:** Dr. P.H.C. Murthy, Prof., H.O.D., P.G. Dept. of R.S. B.K.Dr. NRS. Govt. Ayurvedic College, Vijayawada.

---

Source of support: Nil

Conflict of interest: None

Declared