

A COMPREHENSIVE PHARMACEUTICAL STUDY OF ABHRAKA BHASMA WITH  
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## ABSTRACT

**Introduction:** *Abhraka Bhasma* is a traditional Ayurvedic preparation known for its therapeutic value, particularly in treating respiratory issues, skin disorders and other chronic conditions. To ensure its quality, it is essential to study various pharmaceutical aspects such as the quality of raw *Abhraka*, the purification process i.e., *Shodhana*, the creation of *Dhanyabhraka*, *Marana*, *Amritikarana*, *Lohitikarana* and also *Bhasma Pareeksha*. This study reviews classical texts on the preparation of *Abhraka Bhasma*, focusing on critical factors like the purification process, number of heating cycles *Putas*, and temperature patterns. **Aim and Objectives:** To critically analyze the pharmaceutical processes involved in making *Abhraka Bhasma*, using classical literature to evaluate its *Shodhana*, *Marana*, and other key steps. **Methods and Materials:** A review of classical Ayurvedic texts, including *Rasagrantha* and *Sangraha Grantha*, focusing on the pharmaceutical and analytical aspects of *Abhraka Bhasma*. **Observations and Results:** Classical texts provided specific guidelines for *Abhraka Bhasma* preparation, emphasizing the use of *Gomutra* for *Shodhana* and *Kanji* for the *Dhanyabhraka* process. The number of *Putas* ranged from 3 to 100 to ensure *Bhasma* quality, and tests were conducted based on organoleptic features and classical *Bhasma* tests. **Conclusion:** The review and pharmaceutical procedures highlight the importance of adhering to classical guidelines for *Shodhana*, *Dhanyabhraka*, *Marana*, *Amritikarana* and *Lohitikarana* in *Abhraka Bhasma* preparation. Further studies will help standardize its production and establish reliable analytical parameters.

**KEYWORDS:** *Abhraka Bhasma*, *Bhasma Pareeksha*, *Abhraka Shodhana*, *Dhanyabhraka*, *Marana*, *Amritikarana* & *Lohitikarana*.

## INTRODUCTION

*Abhraka Bhasma* is a traditional Ayurvedic preparation known for its therapeutic value, particularly in treating respiratory issues, skin disorders and other chronic conditions. To ensure the quality of *Abhraka Bhasma*, it is crucial to examine various pharmaceutical aspects, including the selection of raw *Abhraka* and its purification through *Shodhana*. The process further involves the preparation of *Dhanyabhraka*, followed by *Marana*, *Amritikarana*, and *Lohitikarana*, which enhance its therapeutic properties. Additionally, *Bhasma Pareeksha* is conducted to confirm its proper formation. This study reviews classical Ayurvedic texts, highlighting key factors such as the purification techniques, the number of *Putas* and temperature patterns. Understanding these elements ensures the production of high-quality *Abhraka Bhasma* with optimal therapeutic efficacy and safety for medicinal use.

## AIMS AND OBJECTIVES

To prepare the *Abhraka Bhasma* as per classical reference.

## MATERIALS AND METHODS

- **Pharmaceutical source:** Raw drugs required for the preparation of *Abhraka Bhasma* were collected from SDM Pharmacy, Udupi and authentication was done by the subject experts at Sri Dharmasthala Manjunatheshwara College of Ayurveda, Hospital and Research Centre, Kuthpady, Udupi.
- **The preparation of *Abhraka Bhasma*** was carried out in practical hall of department of Rasa Shastra & Bhaishajya Kalpana, SDMCA, Hospital and Research Centre, Kuthpady, Udupi.

**PHARMACEUTICAL STUDY**

The procedures are required for the preparation *Abhraka Bhasma*,

- *Abhraka Shodhana*,
- *Dhanyabhraka Nirmana*,
- *Abhraka Marana*,
- *Bhasma Pareeksha*,

- *Amritikarana*,
- *Lohitikarana*.

**i. ABHRAKA SHODHANA**

*Shodhana* of *Abhraka* was done with the help of *Gomutra*.

**Table No. 1. *Abhraka Shodhana*.**

<b>Reference</b>	<i>Rasa Ratna Samucchaya</i> 2/16-17 <sup>[18]</sup>
<b>Drugs used</b>	1. <i>Ashudda Krishna Vajrabhraka</i> – 680g 2. <i>Gomutra</i> – 4 liters
<b>Method</b>	<i>Nirvapa</i>

**Procedure:** Above mentioned quantity of *Krishna Vajrabhraka* was taken and held carefully with *Sandamsha Yantra* & heated too red-hot. Then it was immediately quenched in the *Gomutra*. The process was repeated for seven times finally *Abhraka* pieces were washed with hot water, dried and weighed.

**Observation:** A hissing sound was observed when *Abhraka* pieces were dipped in *Gomutra*. The temperature of *Gomutra* increases during each *Nirvapa*. The *Gomutra* changes to a blackish color due to the presence of *Abhraka* dust. The *Abhraka* becomes softer, and the layers become more easily separable with each *Nirvapa* process.

**ii. DHANYABHRAKA NIRMANA**

**Table No. 2. Preparation of *Dhanyabhraka*.**

<b>Reference</b>	<i>Rasa Ratna Samucchaya</i> 2/21, <i>Rasendra Sara Sangraha</i> 1/153-154 <sup>[19][20]</sup>
<b>Drugs used</b>	1. <i>Shodhita Abhraka</i> - 638g (1part) 2. <i>Shali Dhanya</i> - 160g (1/4 part) 3. <i>Kanji</i> – 5 liters
<b>Method</b>	<i>Nimajjana</i> & <i>Gharshana</i>

**Procedure:** The above-mentioned quantity of *Shodhita Abhraka* and *Shali Dhanya* was mixed with it thoroughly, both these are firmly tied like a *Pottali* in a jute cloth with thread. This *Pottali* was immersed in *Kanji* for 3 days. After 3 days, the *Pottali* was rubbed vigorously with both hands in the same *Kanji*. Because of the friction between the sheets of *Abhraka* and *Shali*, by which fine particles of *Abhraka* were trickle down in to the *Kanji* and settled in the bottom of the container.

Then it was collected by transferring the supernatant fluid. This procedure was continued till the total *Abhraka* particles escape through the jute bag. Then collected *Abhraka* particles were washed, dried and weighed.

**Observation:** Fine particles of *Abhraka* easily passed through the jute cloth. The color of *Kanji* turned black. The sand and *Shalidhanya* stayed in the *Pottali*. The rubbing process took long time.

**iii. *Abhraka Marana***

**Table NO. 3. *Abhraka Bhasma Nirmana*.**

<b>Reference</b>	<i>Rasendrachintamani</i> <sup>[21]</sup>
<b>Drugs used</b>	1. <i>Dhanyabhraka</i> - 600g 2. <i>Nagavalli Swarasa</i> – Q.S.
<b>Method</b>	Electric Muffle Furnace (EMF).

**Procedure:** Above mentioned quantity of *Dhanyabhraka* was taken in a *Khalva Yantra*. *Bhavana* was given with required quantity of *Nagavalli Swarasa* for 6 hours or till *Subhavita Lakshana*. After that, medium size *Chakrikas* were prepared and dried. These *Chakrikas* were kept on a *Sharava* and dried under sun. Once the *Chakrikas* dried, *Sharava Samputa* was done using Kora cloth & *Multani Mritika* and dried under sun. The *Sharavas* was then subjected to *Gajaputa* using Electric Muffle Furnace (EMF) configured to 900°C and maintained for 50 mins.

The *Abhraka Bhasma* collected was powdered and weighed. The same procedure was repeated for 34 times. For each *Putra*, *Nagavalli Swarasa* was added to *Abhraka Bhasma* for *Bhavana*.

After each *Putra Abhraka Bhasma* was collected, powdered and weighed.

**OBSERVATION**

- ❖ The amount of *Nagavalli Swarasa* was gradually reduced with each *Bhavana*.
- ❖ Each *Bhavana* took about 6-7 hours per *Putra*.

- ❖ On average, it took 6 hours to dry the *Chakrikas* in sunlight.
- ❖ A noticeable reduction in particle size occurred after 3 *Putas*.
- ❖ After the 4<sup>th</sup> *Putas*, it became easier to prepare *Chakrikas* as the black color of *Abhraka* started to fade.
- ❖ After the 6<sup>th</sup> *Putas*, a brick-like color *Abhraka Bhasma* appeared, along with scattered glittering particles.
- ❖ *Rekhapurnata* was noticed after the 8<sup>th</sup> *Putas*.
- ❖ The size of *Chandratva* gradually decreased, and by the 16<sup>th</sup> *Putas*, it was only visible in sunlight.
- ❖ *Varitara* started appearing after the 24<sup>th</sup> *Putas*, followed by *Unama* in the 29<sup>th</sup> *Putas*.
- ❖ By the 30<sup>th</sup> *Putas*, only a few shiny particles remained, and by the 34<sup>th</sup> *Putas*, it became *Nishchandratva*.

#### iv. BHASMA PAREEKSHA

**Reference:** *Rasa Ratna Samucchaya, Rasa Tarangini*<sup>[22][23]</sup>

1. **Shlakshnatva:** A small amount of *Abhraka Bhasma* was taken between the thumb and index finger and

rubbed. It did not cause any irritation, indicating that the *Bhasma* passed the *Shlakshnatva* test, which was primarily conducted to assess its smoothness.

*Shlakshnatva* was observed after 7<sup>th</sup> *Putas*.

2. **Susukshma:** *Susukshma* refers to the micro-fineness of the *Bhasma*. This was observed after 8<sup>th</sup> *Putas*.

3. **Rekhapurnata:** A small amount of *Abhraka Bhasma* was rubbed between the thumb and index finger. The *Bhasma* embedded in the fingerprints, indicating that it was fine enough to meet the standard quality of *Rekhapurnata*.

*Rekhapurnata* was observed after 8<sup>th</sup> *Putas*.

4. **Varitara:** This test is also known as *Jalaplava*.

The prepared *Abhraka Bhasma* was sprinkled over the surface of still water in a small bowl. The *Bhasma* was floating, it was considered to be properly prepared. *Varitara* was observed after the 24<sup>th</sup> *Putas*.

5. **Unnama:** When a grain of rice or *Dhanya* was placed over *Varitara Abhraka Bhasma*, the grain was floating on the surface of *Bhasma*, it was said to be properly prepared. This is the reassessment test of the floating character of *Bhasma*.

*Unama* was observed after the 29<sup>th</sup> *Putas*.

#### 6. Apunarbhava

**Table No. 4. Apunarbhava Bhasma Pareeksha.**

Reference	<i>Rasa Ratna Samucchaya, Rasa Tarangini</i> <sup>[22][23]</sup>
Drugs used	1. <i>Abhraka Bhasma</i> – 10g 2. <i>Mitra Panchaka Dravya</i> - <i>Guda, Gunja, Tankana, Madhu &amp; Ghrita</i> – 10g
Method	Electric Muffle Furnace (EMF).

**Procedure:** *Abhraka Bhasma* was mixed with an equal quantity of *Mitra Panchaka Varga Dravya* and placed in a *Sharava*. The mixture was then subjected to intense heat in a furnace. After heating, there was no change in

the quantity or quality of the *Bhasma*, it indicates that the *Bhasma* has achieved *Apunarbhava*.

*Apunarbhava* was observed after 34<sup>th</sup> *Putas*.

#### 7. Niruttha

**Table No. 5: Niruttha Bhasma Pareeksha.**

Reference	<i>Rasa Ratna Samucchaya, Rasa Tarangini</i> <sup>[22][23]</sup>
Drugs used	1. <i>Abhraka Bhasma</i> – 1g 2. Silver coin – 1g
Method	Electric Muffle Furnace (EMF).

**Procedure:** 1g prepared *Abhraka Bhasma* and 1g of silver coin placed in a *Sharava* and then it was heated intensely in a furnace. The *Bhasma* doesn't stick to the silver coin after being heated, it means the *Bhasma* has passed *Niruttha Pareeksha*.

*Niruttha* was observed after 34<sup>th</sup> *Putas*.

**8. Nishchandratva:** The *Abhraka Bhasma* was rubbed between the thumb and index finger and observed under bright light. The shiny particles were not seen in the *Bhasma*, it shows that the *bhasma* has passed *Nishchandratva*.

*Nishchandratva* was observed after 34<sup>th</sup> *Putas*.

**9. Varna:** Each *Bhasma* has a distinct color, which indicates that it has been transformed into the desired metallic compound. This is because every chemical compound has its own characteristic color.

*Ishtika Varna* was appreciated after 8<sup>th</sup> *Putas*.

v. **ABHRAKA AMRITIKARANA**Table No. 6. *Abhraka Amritikarana*.

Reference	Rasatarangini 10/71 <sup>[24]</sup>
Drugs used	1. <i>Abhraka Bhasma</i> – 100 g 2. <i>Goghrita</i> – 100 g
Method	<i>Bharjana</i>

**Procedure:** 100g of *Abhraka Bhasma* was taken in an iron vessel along with equal quantity of *Ghritha* and kept over the stove and heated until *Ghritha* get dries up completely.

**Observation:** The color of the *Abhraka Bhasma* darkened upon the addition of *Ghritha*. The smell of

*Ghritha* was prominent during the procedure. The softness of the *Bhasma* increased after *Amritikarana*.

vi. **ABHRAKA LOHITIKARANA**

After *Amritikarana*, *Abhraka bhasma* losses its color, to regain its natural color – *Lohitikarana* process was planned.

Table no. 7. *Abhraka Lohitikarana*.

Reference	Rasatarangini 10/65-67 <sup>[25]</sup>
Drugs used	1. <i>Abhraka Bhasma</i> – 106 g 2. <i>Manjishta Kashaya</i> – Q.S.
Method	Electric Muffle Furnace (EMF).

**Procedure:** 106g of *Abhraka Bhasma* was placed in *Khalva Yantra*, and *Manjishta Kashaya* was added until the *Bhasma* was uniformly immersed. The mixture was triturated until it became a semi-solid paste, which was then shaped into *Chakrikas* and dried on *Sharavas*. Once the *Chakrikas* were fully dried, they were placed in a *Sharava Samputa*, and the edges were sealed with clay-smeared cloth and dried under sun. The *Samputa* was then subjected to muffle furnace. The next day, after the *Putra* had cooled naturally, the *Sharava Samputa* was

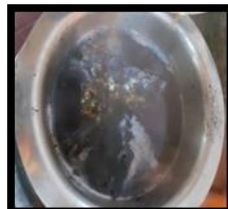
removed, and the *Chakrikas* were carefully collected by opening the sealed edges.

The *Chakrikas* were then powdered and weighed. This process was repeated 3 times. Finally, the *Abhraka Bhasma* was regain its color i.e, *Ishtika Varna*. That *Bhasma* collected and weighed.

**OBSERVATION:** During 35<sup>th</sup> *Putra* *Abhraka Bhasma* was still black in color. At the end of 37<sup>th</sup> *Putra* *Abhraka Bhasma* has Regained its natural *Ishtika Varna*.

*Abhraka Shodhana*Fig.No.1. *Abhraka*

Fig.No.2. Heating in gas stove

Fig.No.3. *Nirvapa* in *Gomutra*Fig.No.4. *Shodhita Abhraka**Dhanyabhakra*Fig.No.5. *Abhraka + Shali*Fig.No.6. *Pottali*Fig.No.7. *Pottali* in *Kanji*Fig.No.8. *Pottali* rubbed in the *Kanji* after 7 days.



**Abhraka Marana**

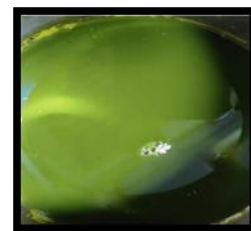
**Fig.No.9.**  
***Dhanyabhraka***



**Fig.No.10.**  
***Dhanyabhraka in  
Khalva Yantra***



**Fig.No.11. *Nagavalli  
Patra***



**Fig.No.12. *Nagavalli  
Swarasa***



**Fig.No.13. *Bhavana  
with Nagavalli  
Swarasa***



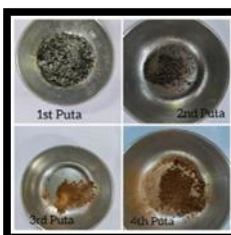
**Fig.No.14. *Abhraka  
Chakrikas***



**Fig.No.15. *Sharava  
Samputa***



**Fig.No.16. *Subjected  
for Puta***



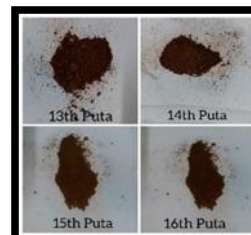
**Fig.No.17. *Abhraka  
Bhasma 1<sup>st</sup> – 4<sup>th</sup> Puta***



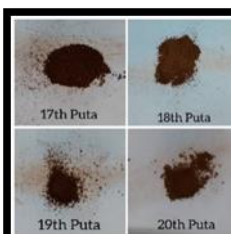
**Fig.No.18. *Abhraka  
Bhasma 5<sup>th</sup> – 8<sup>th</sup> Puta***



**Fig.No.19. *Abhraka  
Bhasma 9<sup>th</sup> – 12<sup>th</sup> Puta***



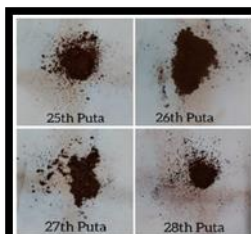
**Fig.No.20. *Abhraka  
Bhasma 13<sup>th</sup> – 16<sup>th</sup> Puta***



**Fig.No.21. *Abhraka  
Bhasma 17<sup>th</sup> – 20<sup>th</sup>  
Puta***



**Fig.No.22. *Abhraka  
Bhasma 21<sup>st</sup> – 24<sup>th</sup>  
Puta***



**Fig.No.23. *Abhraka  
Bhasma 25<sup>th</sup> – 28<sup>th</sup> Puta***



**Fig.No.24. *Abhraka  
Bhasma 29<sup>th</sup> – 32<sup>nd</sup> Puta***



**Fig.No.25. *Abhraka  
Bhasma 33<sup>rd</sup> Puta***



**Fig.No.26. *Abhraka  
Bhasma 34<sup>th</sup> Puta***

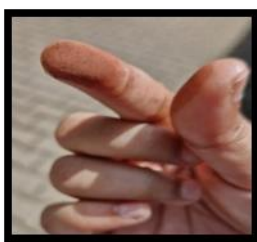
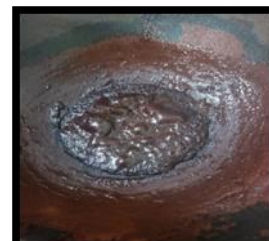
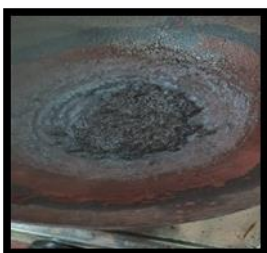
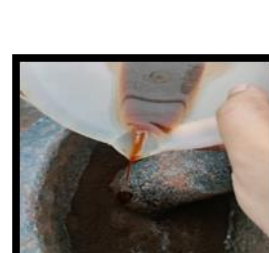


**Fig.No.27.**  
***Rekha Purnata***



**Fig.No.28. *Varitara***

**Bhasma Pareeksha**

Fig.No.29. *Uttama*Fig.No.30.  
*Nishchandravta*Fig.No.31.  
*Apunarbhava*Fig.No.32. *Niruttha***Abhraka Amritikarana**Fig.No.33. *Abhraka Bhasma*Fig.No.34. *Goghrita*Fig.No.35. Addition of  
*Bhasma to Ghrita*Fig.No.36. Changes after  
continuous of 3 hours of  
heatFig.No.37. Changes  
after 5 hours of heatFig.No.38. *Varnahani Abhraka Bhasma*Fig.No.39.  
*Amritikarana Abhraka Bhasma*Fig.No.40. Addition of  
*Manjishta Kashaya*Fig.No.41. Prepared  
*Chakrikas*Fig.No.42. Subjected  
for *Puta*Fig.No.43. 35<sup>th</sup> – 37<sup>th</sup>  
*Puta Abhraka Bhasma*Fig.No.44. *Lohitikarana Abhraka Bhasma***RESULTS AND OBSERVATIONS****TABLE NO. 8. Results of *Abhraka Shodhana*.**

Weight of <i>Abhraka</i> before <i>Shodhana</i>	685g
<i>Gomutra</i>	2 liters
Weight of <i>Abhraka</i> after <i>Shodhana</i>	650g
No. of days taken	2 days
Loss of <i>Abhraka</i> in g	35g
Weight loss in %	4.67%

Table NO. 9. Results of *Dhanyabhraka*.

Ingredients	Ratio	Quantity
<i>Shuddha Abhraka</i>	1 part	650g
<i>Shali Dhanya</i>	1/4 part	162.5g
<i>Kanji</i>	Q.S.	3 liters
Total <i>Dhanyabhraka</i> obtained		600g
No. of days taken		5 days
Loss of <i>Abhraka</i> in g		50g
Weight loss in %		7.6%

Table No. 10 (i). Results of *Abhraka Marana* in different *Putas*.

Observation <i>Put</i> No	Wt. > each <i>Put</i> in g.	<i>Nagavalli</i> <i>Swarasa</i> in ml	Final Wt. in g	Loss in g & %	Peak temp. in °C	Color	Taste	Touch
1	600	250	548	52 (8.6%)	900	Black	Clay like	Smooth
2	548	250	518	30 (5.4%)	900	Blackish	Clay like	Smooth
3	518	250	504	14 (2.7%)	900	Blackish	Clay like	Smooth
4	504	250	494	10 (1.9%)	900	Brown	Clay like	Smooth
5	494	250	488	6 (1.2%)	900	Brown	Clay like	Smooth
6	488	230	484	4 (0.8%)	900	Brownish	Clay like	Smooth
7	484	230	482	2 (0.4%)	900	Pale brown	Clay like	Smooth
8	482	230	482	0 (0%)	900	Pale brown	Clay like	Smooth
9	482	230	481	1 (0.2%)	900	Brown	Clay like	Smooth
10	481	220	480	1 (0.2%)	900	Dark brown	Clay like	Smooth
11	480	220	480	0 (0%)	900	Brown	Clay like	Smooth
12	480	220	478	2 (0.4%)	900	Brown	Clay like	Smooth
13	478	220	474	4 (0.8%)	900	Brown	Clay like	Smooth
14	474	220	472	2 (0.4%)	900	Brown	Clay like	Smooth
15	472	210	472	0 (0%)	900	Brown	Clay like	Smooth
16	472	210	470	2 (0.4%)	900	Brown	Clay like	Smooth
17	470	210	468	2 (0.4%)	900	Brown	Clay like	Smooth
18	468	200	466	2 (0.4%)	900	Brown	Clay like	Smooth
19	466	200	464	2 (0.4%)	900	Brown	Clay like	Smooth
20	464	180	460	4 (0.8%)	900	Brown	Clay like	Smooth
21	460	180	456	4 (0.8%)	900	Brown	Clay like	Smooth
22	456	180	450	6 (1.31%)	900	Brown	Clay like	Smooth
23	450	180	440	10 (2.2%)	900	Brown	Clay like	Smooth
24	440	150	440	0 (0%)	900	Brown	Clay like	Smooth
25	440	150	438	2 (0.4%)	900	Brown	Clay like	Smooth
26	438	150	438	0 (0%)	900	Dark brown	Clay like	Smooth
27	438	150	438	0 (0%)	900	Dark brown	Clay like	Smooth
28	438	150	434	4 (0.8%)	900	Brick	Clay like	Smooth
29	434	150	434	0 (0%)	900	Brick	Clay like	Smooth
30	434	150	430	4 (0.8%)	900	Brick	Clay like	Smooth
31	430	140	430	0 (0%)	900	Brick	Clay like	Smooth
32	430	140	430	0 (0%)	900	Brick	Clay like	Smooth
33	215 (taken 1/2 quantity)	80	212	2 (0.4%)	900	Brick	Clay like	Smooth
34	212	80	200	12 (5.6%)	900	Brick	Clay like	Smooth

Table No. 10: (ii). Results of *Abhraka Marana*.

Total <i>Abhraka Marana</i> obtained	415g
No. of months taken	9 months
Loss of <i>Abhraka</i> in g	185g
Weight loss in %	30.8%



Table No. 11. Temperature Recordings in EMF.

Time in hr	1 <sup>st</sup> Puta	5 <sup>th</sup> Puta	10 <sup>th</sup> Puta	15 <sup>th</sup> Puta	20 <sup>th</sup> Puta	25 <sup>th</sup> Puta	30 <sup>th</sup> Puta	34 <sup>th</sup> Puta	Average
0	28	27	29	28	29	28	28	29	28
1	122	125	128	123	124	124	122	128	124
2	343	346	355	380	377	360	343	355	360
3	528	572	544	586	519	549	528	544	549
4	732	721	746	777	704	736	732	746	736
5	832	816	855	880	871	850	832	855	850
6	900	900	900	900	900	900	900	900	900
7	893	885	862	893	889	887	893	862	887
8	865	846	821	850	847	854	865	821	854
9	821	827	798	818	809	819	821	798	819
10	792	794	775	783	791	791	792	775	791
11	763	776	732	768	761	768	763	732	768
12	736	735	708	728	739	734	736	708	734
13	703	705	671	701	706	704	703	671	704
14	683	686	651	680	673	678	683	651	678
15	658	657	628	652	654	654	658	628	654
16	628	625	575	621	627	625	628	575	625
17	583	584	549	581	587	582	583	549	582
18	558	567	508	548	551	554	558	508	554
19	502	505	475	503	504	504	502	475	504
20	483	486	449	473	478	479	483	449	479
21	438	427	398	438	429	436	438	398	436
22	392	394	355	389	384	344	392	355	344
23	343	346	314	340	337	307	343	314	307
24	304	310	278	308	303	271	304	278	271
25	275	269	235	271	264	228	275	235	228
26	233	226	209	226	221	188	233	209	188
27	208	203	188	201	199	204	208	188	204
28	191	185	151	183	184	186	191	151	186
29	156	159	115	149	147	152	156	115	152
30	119	123	98	112	110	115	119	98	115
31	101	103	83	95	92	97	101	83	97
32	87	89	69	80	77	83	87	69	83
33	73	71	51	65	60	67	73	51	67
34	58	55	35	49	44	51	58	35	51
35	33	39	28	38	37	36	33	28	36
36	29	27	28	28	29	28	29	28	28

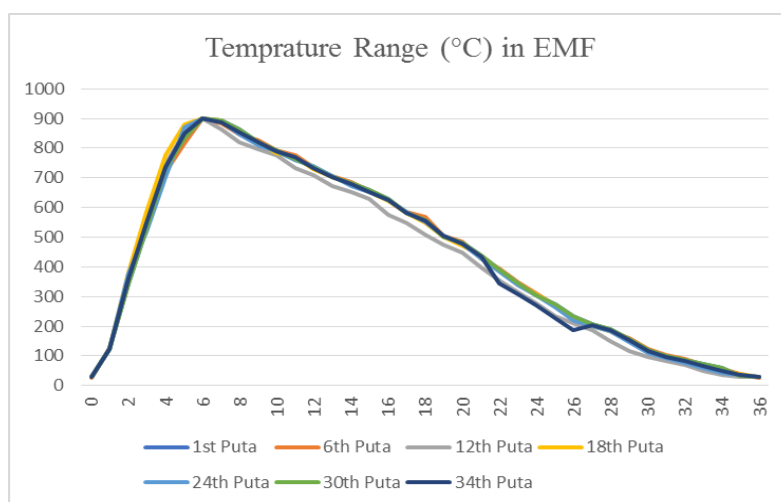


Figure.No.45. Temperature Graph in EMF.



Table No.12. Results of *Abhraka Amritikarana*.

Ingredients	Ratio	Quantity
<i>Abhraka Bhasma</i>	1 part	100g
<i>Ghrita</i>	1 part	100g
Total <i>Abhraka Bhasma</i> obtained after <i>Amritikarana</i>		106g
No. of days taken		1 day
Volume increased		6g

Table NO. 13 (i). Results of *Abhraka Lohitikarana* in different *Putas*.

Observation	Wt. > each <i>Put</i> in g.	<i>Nagavalli Swarasa</i> in ml	Final Wt. in g	Loss in g & %	Peak temp. in °C	Color	Taste	Touch
<i>Put</i> No								
35	106	65	92	14 (13.2%)	900	Dark brown	Clay like	Smooth
36	92	60	82	10 (10.8%)	900	Brown	Clay like	Smooth
37	82	60	80	14 (2.4%)	900	Brick red	Clay like	Smooth

Table No. 13 (ii). Results of *Abhraka Lohitikarana*.

Ingredients	Ratio	Quantity
<i>Amrutikarana Abhraka Bhasma</i>	1 part	106g
<i>Manjishta Kashaya</i>	Q.S.	Q.S.
Total <i>Abhraka Bhasma</i> obtained		106g
No. of days taken		15 days
Volume loss		26g
Weight loss in %		24.5%

## DISCUSSION

**Preparation of *Abhraka Bhasma*:** It includes various steps: *Abhraka Shodhana*, *Dhanyabhraka*, *Abhraka Marana*, *Bhasma Pareeksha*, *Amritikarana* and *Lohitikarana*.

***Abhraka Shodhana*:** *Shodhana* is a crucial pharmaceutical process applied to all *Rasa Dravyas* to ensure their purity, safety, and maximum therapeutic effectiveness. *Abhraka*, one of the *Maharasa Dravyas*, undergoes *Shodhana* based on the classical reference of *Rasa Ratna Samucchaya*. The method used was *Nirvapa* in *Gomutra*, where the *Abhraka* was heated and immediately quenched in the liquid medium, repeated seven times.

*Nirvapa* involved heating the substance and immersing it in a liquid to reduce its size and remove the impurities. Repeated heating and cooling cycles reduce *Abhraka*'s hardness and made it brittle. The heating caused linear expansion, while immediate cooling led to a decrease in tension and an increase in compression force. This repeated heating and cooling in liquid medium causes disruption of compression tension equilibrium leads to increased brittleness, reduced hardness, and ultimately reduced particle size.

During *Nirvapa* of *Abhraka*, for the first *Shodhana* took approximately 40 minutes to reach red-hot and 10 minutes to cool completely. The duration of *Nirvapa*

decreased with subsequent *Shodhana*, and the particle size reduced significantly. When dipped in *Gomutra*, the color of liquid changed from yellowish to blackish due to the presence of impurities. At the end of *Nirvapa*, the impurities were removed and the particle size was reduced.

After *Shodhana*, *Abhraka* exhibited a matte black color, and the characteristic smell of *Gomutra* was noticeable.

***Dhanyabhraka*:** *Shodhita Abhraka* was powdered, mixed with the *Shalidhanya*, and tied in a jute cloth like *Pottali*. It was soaked in *Kanji* for 3 days, then rubbed vigorously to release *Abhraka* particles.

During the *Dhanyabhraka* process, *Abhraka* was mixed with *Shalidhanya* and underwent maceration in a *Pottali*, resulting in a significant loss of *Abhraka* due to particle adhesion. Converting *Shodhita Abhraka* into *Dhanyabhraka* has two benefits. Firstly, it helped in separating *Abhraka* from impurities like stones and sand. Being a *Parthiva Dravya*, *Abhraka* naturally contains these inorganic impurities during its formation. Even after *Shodhana*, some of these impurities may remained trapped between its layers. To remove these impurities, converting *Shodhita Abhraka* into the *Dhanyabhraka* process was essential.

Secondly, it made *Abhraka* suitable for *Bhavana* and *Marana*. To prepare *Abhraka Bhasma* after *Shodhana*, *Marana* was required. In its flaky form, it was difficulty

to apply *Bhavana* with liquid media and form *Chakrikas*. When *Abhraka* was converted into powder, *Bhavana* became easier, and it was simple to form *Chakrikas*, which were then subjected to *Marana* for preparing the *Bhasma*.

**Abhraka Marana:** In *Marana* the *Shodhita Rasa Dravya* undergoes *Bhavana* and *Agni Samskara*. The very definition of *Samskara* explains *Gunantaradhanam*, which refers to the transformation of the *Guna* of the substance. In *Marana*, *Agni Samskara* imparts qualities like *Laghu* and *Sheeghra Vyapti* to the substance, allowing it to quickly and easily spread throughout the *Shareera*. This process also enhances the *Deepana Karma* and increases the potency of the *Bhasma*. *Bhavana Samskara* further adds to these benefits.

The *Bhavana* process is essential in *Marana*. The continuous grinding softened the mineral substance, making it finer and increasing its surface area. The *Bhavana Dravya* acts as a catalyst in the *Marana* procedure, contributing trace elements to the process. With repeated *Bhavana* before each *Putra*, the unreacted particles were further exposed to interactions with herbal compounds, facilitating complete conversion and enhancing the therapeutic potential of the *Bhasma*. For *Abhraka Marana*, *Nagavalli Swarasa* was used, adding its unique therapeutic qualities to enhance the process. *Nagavalli*, with its *Kaphanisaraka* and *Bhedana Guna* properties, indicated for conditions like *Kasa* and *Swasa*, among other medicinal uses. During *Bhavana*, the organic and trace elements of *Nagavalli* added more therapeutic value, making it potentially beneficial for lung cancer.

In the classical textbook of *Rasashastra*, various *Marana Dravyas* were mentioned for the *Marana* of *Abhraka*. *Abhraka Marana* was carried out according to the reference in *Rasa Tarangini*, where it is stated, यथारोगं यथालाभं भैषजैः पुटयेद् घनम् /. We selected *Nagavalli* as the *Bhavana Dravya* based on its properties, which helped in cancer treatment.

During the 1<sup>st</sup> *Marana*, the particles of *Abhraka* were rough to the touch and larger in size. It was difficult to perform *Bhavana* and prepare uniformly sized *Chakrikas*. As *Marana* continued, the *Bhasma* became softer, and the particle size reduced. The quantity of *Nagavalli Swarasa* also decreased along with the time required to achieve *Subhavita Lakshana*.

*Chakrikas* were made of uniform size. They were dried completely under sunlight before being subjected to *Putra* to avoid moisture. The *Chakrikas* were arranged in a single layer for uniform heat distribution.

The *Gajaputa* was used as a standard measure for *Agni Samskara*, where heat was applied systematically using an Electric Muffle Furnace. Referring to previous studies

on the heat pattern in *Gajaputa*, the *Marana* process of *Abhraka Bhasma* was carried out. The temperature was set at 900°C for 50 minutes. After the 3<sup>rd</sup> *Putra*, the color of the *Bhasma* changed to golden, and its particle size was reduced. The temperature was maintained consistently throughout the *Putra Samskara*. After each *Putra*, *Rekhapurnata* and *Nischandratva* were assessed to check the progress of *Marana*. Significant changes were observed during the 3<sup>rd</sup>, 8<sup>th</sup>, 24<sup>th</sup>, 29<sup>th</sup>, and 34<sup>th</sup> *Maranas*. After the 8<sup>th</sup> *Putra*, *Slakshnata*, *Rekhapurnata*, and *Varna Pareeksha* showed positive results, but *Chandratva* indicated that the *Bhasma* was still incomplete. After the 29<sup>th</sup> *Putra*, the *Varitara* and *Unnama* tests were passed. In the 34<sup>th</sup> *Putra*, *Nischandratva* was achieved, and the *Bhasma* color matched the *Ishtika Varna* described in the classics. During the 34<sup>th</sup> *Putra*, the *Apunarbhava* and *Niruttha Bhasmapareeksha* were also conducted, showing positive results, confirming the proper formation of the *Bhasma*.

**Abhraka Amritikarana:** After 34 *Putra*, the *Abhraka Bhasma* was subjected to the *Amritikarana* procedure, following the reference from *Rasa Tarangini*. This procedure is chosen because it is commonly practiced, *Ghrita* is easily available, and the method is straight forward. This special pharmaceutical procedure, was carried out to remove remaining *Doshas* from the *Bhasmas* of metals or minerals and to enhance qualities like *Amrita*.

*Ghrita* was placed in a vessel and heated gently. Once the *Ghrita* melted, *Abhraka Bhasma* was added and cooked with frequent stirring. Foam was consistently present throughout the process. During the first 3 hours of heating, the *Abhraka Bhasma* remained in a liquid state. Gradually, the *Ghrita* was absorbed into the *Bhasma*. After 4 hours of heating, the consistency became paste-like, and the color darkened little by little. Heating continued until all moisture evaporated, which took 5 hours and 40 minutes. The *Abhraka Bhasma* turned dark chocolate brown and became powdery in texture. The weight of the *Bhasma* used for *Amritikarana* was 100g, which increased to 106g, possibly due to the *Snigdha Guna* of *Ghrita*. This procedure mainly helps in removing impurities from the *Bhasma* and reduces the *Rukshata* caused by *Agni Samskara*.

**Abhraka Lohitikarana:** A unique procedure is mentioned for *Abhraka Bhasma*. After *Amritikarana*, the *Bhasma* loses its color, so to regain the *Lohita Varna* i.e., brick-red color, a special *Samskara* is performed. This process is carried out after *Amritikarana*, following the reference from *Rasa Tarangini*.

Various *Bhavana Dravyas* is mentioned for restoring the color, and in this procedure, *Manjishta Kashaya* was used as the *Bhavana Dravya* due to its *Varnakrut* property. After preparing the *Kashaya*, it attained a red color, which helped in restoring the original color of the *Bhasma*.

For *Lohitakarana*, *Manjishta Kashaya Bhavana* was given. Once the *Subhavita Lakshana* was attained, uniform-sized *Chakrikas* were prepared and dried in sunlight. The *Chakrikas* were arranged in a single layer to ensure even heat distribution. After the 1<sup>st</sup> *Putra*, the *Bhasma* turned brown and became soft. By the 3<sup>rd</sup> *Putra*, the desired *Ishtika Varna* of the *Abhraka Bhasma* was achieved.

## CONCLUSION

*Abhraka Bhasma*, a highly valued mineral-based medicine in Ayurveda, has been widely used for centuries to treat various health conditions. To maximize its effectiveness, *Abhraka* undergoes rigorous processing, including *Shodhana*, *Dhanyabhraka*, *Marana*, *Amritakarana* and *Lohitakarana* along with its *Bhasma Pareeksha*. These stages ensure the medicine is easily absorbed and utilized by the body. A thorough review and pharmaceutical study provide valuable guidelines for understanding the therapeutical as well as pharmaceutical aspects of *Abhraka Bhasma*.

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