IAMJ

INTERNATIONAL
AYURVEDIC
MEDICAL JOURNAL

Research Article | ISSN: 2320 5091 | Impact Factor: 5.344

A COMPARATIVE PHARMACEUTICO-ANALYTICAL STUDY OF KASISA BHASMA PREPARED BY TWO METHODS W.S.R. TO MARANA DRAVYAS

Nirmala Kushwaha[1], Urmila Waxar[2]

[1,2]Assistant Professor, Department of *Rasa Shastra and Bhaishajya Kaplana*
Govt. Dhanvantari Ayurveda College, Ujjain, Madhya Pradesh, India

Corresponding Author: kusnirmala@gmail.com

https://doi.org/10.46607/iamj0408112020

(Published online: November 2020)

Open Access
© International Ayurvedic Medical Journal, India 2020

Article Received: 15/10/2020 - **Peer Reviewed:** 08/11/2020 - **Accepted for Publication:** 15/11/2020

Check for updates

ABSTRACT

Marana is a very important process which plays most significant role in converting the minerals and metals in to assimilable, efficacious dosage forms, with least or no harmful effects. It is scientific process which includes *Shodhana* [Purification], *Marana* [Impregnation followed by calcination] and *Amritikarana* [removal of residual blemishes] etc. Role of *Marana Dravya* stands very important in this process as these drugs help in converting the minerals or metals into micro-fine state as well as develop new desirable effects/ properties in the resultant products. *Kasisa Bhasma* is a popular *Bhasma* which is prepared from *Kasisa* [Green Vitriol-chemical formula -FeSo4.7H2O] It is *Amla, Tikta, Kashaya* in *Rasa, Ushna Veerya* drug with *Vatashleshmahara, Grahi, Netrya, Keshya, Kanduhar, Vishhara, Krimihara, Switrahara, Vranahara* properties and is indicated in various disorders i.e. *Pandu, Mutrakriccha, Pleeharoga, Krimi, Shwitra, Rajoroddha* etc. On analysis of its indications it can be seen that this *Bhasma* is indicated for internal as well as external use. That's why this formulation for internal as well as external use having *Kasisa Bhasma* as an ingredient. Literary survey of classics shows various methods of *Kasisa Bhasma* preparation in which different *Marana Dravyas* are indicated among these *Marana* with *Snuhipatra Swarasa* seems specific which is referred by the text *Rasa Tarangini*- reference 21/255-258. But AFI referred *Rasamritam* for *Kasisa Bhasma* preparation. So the study was planned to compare the *Kasisa Bhasma* prepared by two methods [AFI vs R.T.] pharmaceutically with special reference to their *Marana Dravya* used, and analytically on the defined classical and modern parameters of *Bhasma Pariksha i.e. Sparsha, Varna, Niramlatva, Rekhapurnatva*, loss on

drying, ash value, acid insoluble ash, assay for iron etc. to find out the effect of *Bhavana Dravya* used on the organoleptic and physicochemical characters of *Kasisa Bhasma*.

Keywords: *Kasisa, Marana,* AFI*, Nimbu Swarasa, Snuhipatra Swarasa*, Iron %.

INTRODUCTION

Rasakalpa stands superior to any other *Aushadh Kalpas* as they provide tremendous results even in low dose, are more palatable, fast acting and having miraculous results on the critical disease conditions. *Rasa Kalpa* has shown a miraculous effect where the other remedies fails. The concept of *Marana* which includes *Bhavana* [impregnation in any liquid], *Puta* [quantum of heat given, incineration], number of *Puta* etc. plays very important role in converting a raw mineral or metal in to micro fine, assimilable, safer compound with medicinal properties and least or no harmful effects. Besides natural properties new desirable properties are also included through various *Marana Dravyas. Kasisa Bhasma* is a popular *Bhasma* which is prepared from *Kasisa* (green vitriol) and is indicated for various disease i.e. *Pandu, Pleeharoga, Krimi, Mutrakrichha, Rajorodha*. It is used as an ingredient of various formulations. Classics show several methods of preparation for *Kasisa Bhasma*. About 15 text provided *Kasisa Bhasma* process among these *Nimbu Swaras* is widely used *Marana Dravya*. Among the other *Dravya's Snuhipatra Swaras* was specific. As *Marana Dravya* is very important in preparing a good and defined quality *Bhasma*, so this study was planned to study two samples of *Kasisa Bhasma,*1st prepared by the reference of AFI using *Nimbu Swaras*as *Marana Dravya* and 2nd prepared by the reference of *Rastarangini* using *Snuhipatra Swarasa,* pharmaceutically and analytically. The two *Bhasma* sample were tested for different criteria and total iron content and compared to establish the role of *Marana Dravya* with reference to quality of *Kasisa Bhasma.*

Aim and Objective:

1. To prepare two pharmaceutically different sample of *Kasisa Bhasma*. Sample 1- *Rasamritam* 3/160 & AFI, Sample 2 – *Rasatarangini* 21/255-258
2. To analyse the two prepared *Kasisa Bhasma* samples on different parameters and compare the result.

Material and Method: Collection of raw materials, *Kasisa* (Green Vitriol- FeSO4.7H2O), *Bhringraj* (Eclipta alba), *Nimbu Swarasa* (Citrus lemon), *Snuhipatra Swarasa* (Euphorbia nerifolia), Material and equipment's for *Puta- Upala*, *Sharav*, *Kharal*

Pharmaceutical Study: Classic shows that *Ayurvedic* formulations were never prepared for commercial purpose. There was no separate entity which could be called as drug manufacturer or trader. Changes in formulations were introduced by the physician himself for the benefit of a specific patient. So, one must understand the significance of procedure followed or indicated in different text. Keeping this in mind two references for *Kasisa Bhasma* preparation are followed here to compare the resultant pharmaceutically and analytically.

The pharmaceutical process was divided into following steps.

- Preparation of *Bhringaraja Swarasa*
- *Kasisa Shodhana* by *Rasamritam*- 3/158
- Preparation of *Nimbu Swarasa*
- Preparation of *SnuhiPatra Swarasa*
- *Marana* of *Kasisa* by two methods -

1) *Rasamritam* 3/160 (Recommended by AFI)
2) *Rasatarangini* 21/255-258

***Kasisa Shodhana* [purification of *Kasisa*]**

Purification of *Kasisa* was done according to *Rasamitram*-3/158 i.e. three times *Bhawana* of *Bhringraj Swarasa* [*Eclipta Alba*].

Table 1: Showing observations of *Shodhana* process

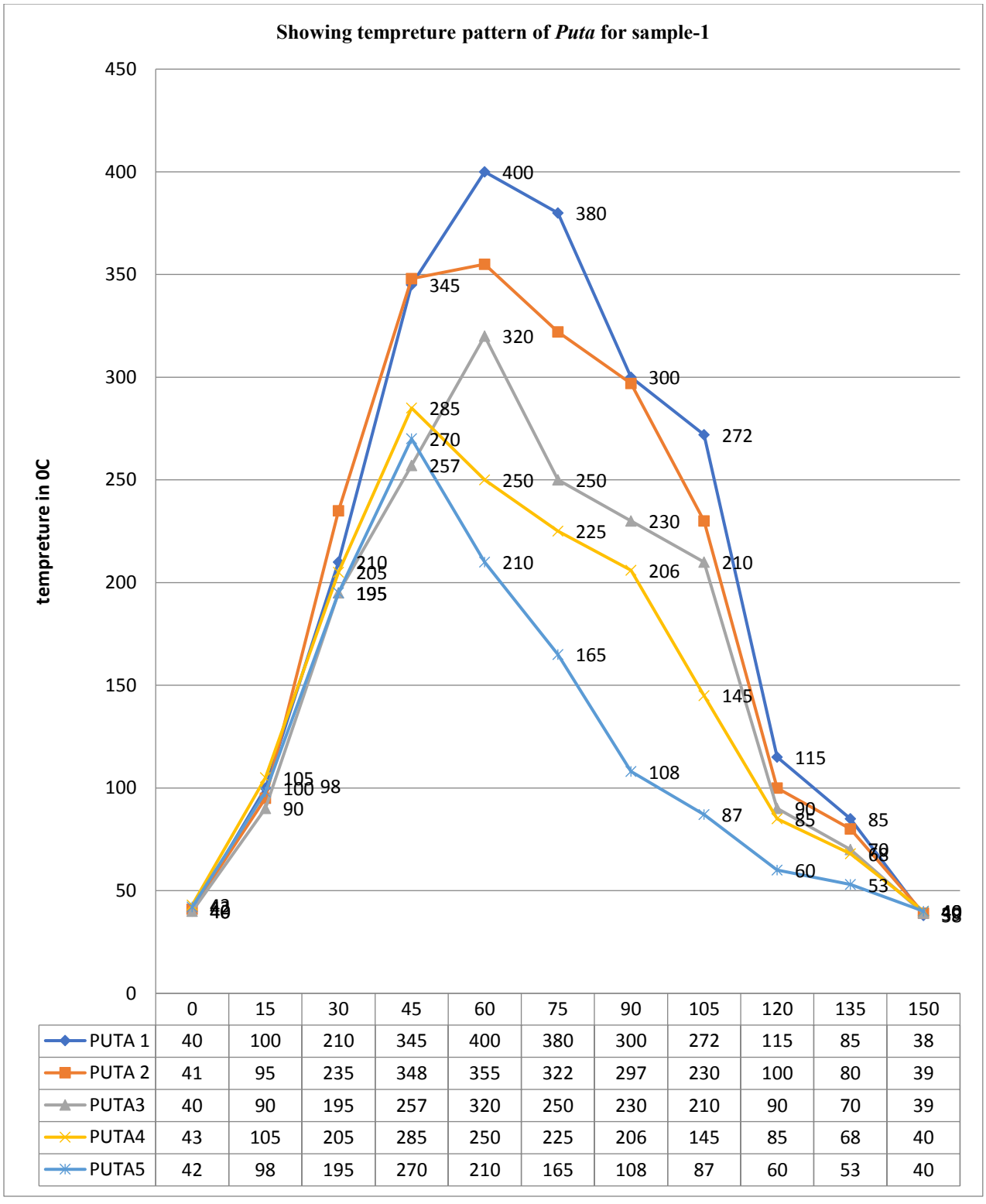
Sample	Weight of *Kasisa* (in gm)	Number of *Bhavana*	*Bhavana dravya (Bhringaraja Swarasa)* Consumed (in ml)	Weight of *Kasisa* After *Bhavana* (in gm)	Weight loss of *Kasisa* after *Bhawana* (in %)
Sample 1	1500 gm	3	1950 ml.	1350gm	10%
Sample 2	1500 gm	3	1950ml.	1350gm	10%

***Kasisa Marana* – Sample-1**

For Sample 1: 1350 gm of *Shodhita Kasisa* was taken and triturated for 3 hours with sufficient quantity of *Nimbu Swarasa* [as per definition of *Bhawana*] then pellet formation, drying of pellets was done and *Puta* was given. The process was repeated and 5 *Putas* were given.

Table 2: Showing observation of *Marana* [incineration] sample 1:

Puta	*Sodhita Kasisa* (in gm)	*Nimbu Swaras* (ml)	Wt. of *Chakrika* after *Bhavana* (gm)	Wt. of Cow dung cakes (gm/*Puta*	Weight of *Chakrika* After *Puta* (gm)	Colour	Hardness	Wt. Loss of *Kasisa* after *Puta* in %
1	1350 Gm	700 ml	1430 gm	3500 gm	900 gm	Yellowish green	Soft	33.3%
2	900 gm	600 ml	960 gm	3000 gm	620 gm	Blackish red	Very soft	31.1%
3	620 gm	350 ml	650 gm	1500 gm	440 gm	Blackish red	soft	29%
4	440 gm	200 ml	398 gm	1000 gm	364gm	Red	Soft	17%
5	364 gm	150 ml	371 gm	800gm	350 gm	Red	Soft	3.8%



	0	15	30	45	60	75	90	105	120	135	150
PUTA 1	40	100	210	345	400	380	300	272	115	85	38
PUTA 2	41	95	235	348	355	322	297	230	100	80	39
PUTA3	40	90	195	257	320	250	230	210	90	70	39
PUTA4	43	105	205	285	250	225	206	145	85	68	40
PUTA5	42	98	195	270	210	165	108	87	60	53	40

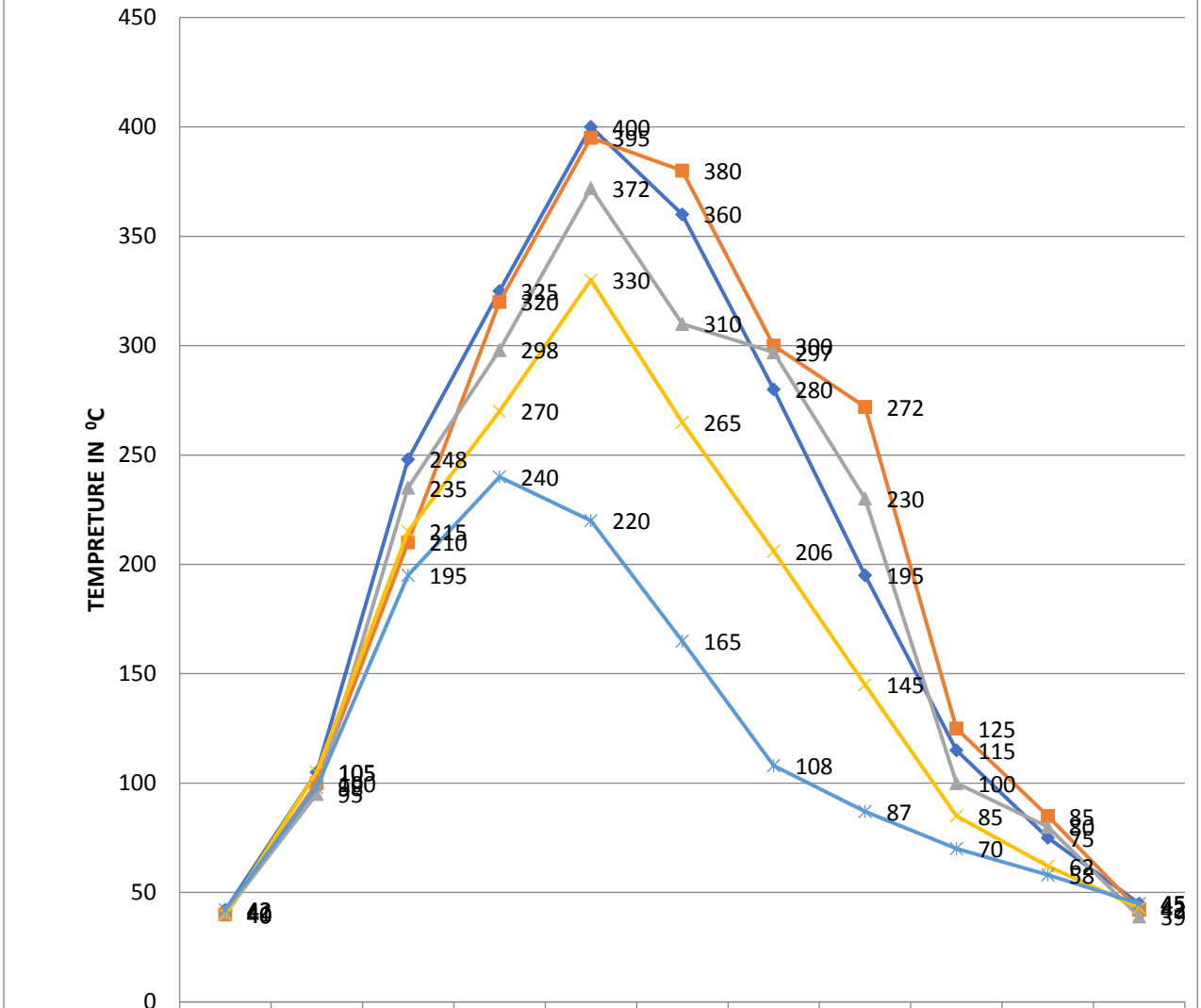
***Kasisa Marana* – Sample-2**

For sample-2 1350 gm of *Shodhita Kasisa* was taken and triturated with *Snuhipatra Swarasa* for 3 hours and same process was done as shown in sample-1

Table 3: Showing observation of *Marana* (Incineration) Sample 2

Puta	*Shodhit Kasisa* (gm)	*Snuhi Parta Swarasa* (ml)	Wt. of *Chakrika* After *Bhavna* (gm)	Wt. of *Chakrika* After *Puta* (gm)	Wt. of Cow dung cakes in gm/*Puta*	Colour	Hardness	Wt. Loss of *Kasisa* after *Puta*
1	1350 gm	700 ml	1398gm	840 gm	3500gm	Greenish yellow	Soft	37%
2	840 gm	450 ml	895 gm	670 gm	3000gm	Blackish red	Soft	20%
3	665 gm	350 ml	700 gm	560 gm	1500gm	Blackish red	Very soft	15%
4	560 gm	250 ml	580 gm	540 gm	1200gm	Red	Very soft	3%
5	540 gm	250 ml	570 gm	520 gm	1000gm	Red	Very soft	3%

Showing tempreture pattern of *Puta* for sample-2



	0	15	30	45	60	75	90	105	120	135	150
puta 1	42	105	248	325	400	360	280	195	115	75	45
puta 2	40	100	210	320	395	380	300	272	125	85	42
puta 3	41	95	235	298	372	310	297	230	100	80	39
puta 4	40	105	215	270	330	265	206	145	85	62	43
puta 5	42	98	195	240	220	165	108	87	70	58	45

Analytical Study: The two samples of *Kasisa Bhasma* procured were subjected to organoleptic, classical *Bhasma Pariksha* parameters as well as physicochemical tests and total Iron percentage to analyse the products for the effect of different pharmaceutical procedures adapted in this study.

This analytical study was done in office of the Controller, Drugs testing laboratory *Evam Anusandhana* Kendra Raipur Chhattisgarh & *Chaukse* laboratory limited Indore, M.P.

Observations and Results:

Observations of Pharmaceutical study-

Under pharmaceutical process for both samples initially 1350gms of *Shodhita Kasisa* was taken, and conventional *Puta* method was followed. Total 5 *Puta* were given to both samples. For sample-1 (Table No. 2) the incineration pattern shows marked reduction in weight after *Puta*, up to 4th*Puta* while the loss was 3.8% after 5th*Puta* finally 364gms of *Kasisa Bhasma* sample-1 was procured. For sample-2 (Table No. 3) incineration pattern shows maximum reduction in weight after 1st*Puta* which gradually falls in 2nd and 3rd*Puta*, while there was least reduction in weight after 4th and 5th*puta*, and finally 540gms of *Kasisa Bhasma* was procured.

Observations of Analytical study-

Table 4: Showing Organoleptic characters of *Kasisa Bhasma* sample-1 and sample 2

S. No.	Parameter	Sample 1	Sample 2
1.	*Shabda*	Absent	Absent
2.	*Sparsha* (Touch)	Smooth	Smooth
3.	*Varna* (Colour)	Red	Red
4.	*Rasa* (Taste)	*Niramlatava* +ve	*Niramlatava* +ve
5.	*Gandha* (Odour)	Odourless	Odourless
6.	*Rekhapurnatva*	Complies	Complies
7.	*Slakshanatva*	Complies	Complies
8.	*Nishchandratva*	Complies	Complies
9.	*Laghuta*	Complies	Complies
10.	*Dantagrekachkachabhava*	Complies	Complies

Table 5: Showing Physico-Chemical parameters of *Kasisa*-Impure, *Kasisa- Sodhita Kasisa Bhasma* sample-1 and sample-2

S. No.	Sample name	Loss on drying %w/w	Ash value %w/w	Acid soluble Ash %w/w	Water soluble ash %w/w	Total Iron %w/w
1	*Pushpa Kasisa*(impure)	37.15%	58.03%	0.13%	47.13%	26.45%
2	*Pushpa Kasisa* (*Shodhita*)	18.3%	74.56%	0.56%	63.7%	24.40%
3	SAMPLE- 1	0.45%	99.33%	8.76%	7.06%	67.8%
4	SAMPLE -2	0.25%	99.6%	7.7%	6.1%	59%

Analysis of organoleptic parameter shows that both samples complies the classical character of *Bhasma*. Both samples of *Kasisa Bhasma* were smooth, *Slakshana, Rekhapurna, Laghu, Niramlatva* and red in colour. Hence both the methods can be recommended to get *Bhasma* having classical standard characteristics. During incineration ferrous sulphate of raw *Kasisa* changes ferric and ferrous oxide which imparts red colour to the resultant *Bhasma*. *Niramlatva* test is an important parameter for *Kasisa Bhasma Pariksha*. pH of both sample was 4.8 and 5.7 respectively, which indicates *Bhasma* is acidic. But both samples comply *Gatarasatva (Niramlatva*) test.

Analysis of physicochemical parameters of both sample shows that both the samples complies loss on drying, loss on ignition, and ash value test. Acid insoluble ash value of sample-1 was 8.76% and sample-2 was 7.7%, which favours the solubility of *Bhasma* in gastric media and hence it favours the therapeutic importance in terms of a physiological availability of the *Bhasma.* Total iron content of raw *Kasisa* was 26.45% w/w, while in sample-1 total iron was 67.8 % w/w and in sample-2 total iron was 59% w/w. It reflects that sample-1 contains more available iron hence therapeutically better than sample-2.

CONCLUSION

AFI recommends the text *Rasamritam* for *Kasisa Marana*, which was proven best on the recommended criteria. But on analysing the methods of *Kasisa Marana* in classical texts *Snuhipatra Swarasa* was specific than other advised *Marana Dravyas*, so comparative study was performed, and results were analysed. It is concluded that *Snuhipatra Swarasa*as *Marana Dravyas* can be recommended to get a classical standard *Kasisa Bhasma*. But therapeutically sample-1 that is *Nimbu Swarasa Marita Kasisa Bhasma* will be better for internal use, as the media used here, favours the gut absorption level. Classical review of *Snuhi* shows its indication in various compounds indicated for *Kustha, Arsha, Shwitra, Bhagandar, Dadru* etc. where mostly external use is recommended, As *puta* converts hard material into soft and fine organometallic form and also introduce new therapeutic properties through the herbs used, so here it can be concluded that *Snuhipatra Swarasa Marita Kasisa Bhasma* should be recommended for specially external use.

REFERENCES

1. The Ayurveda Formulary Of India, Part -1, Govt Of India, Ministry Of Health And Family Welfare, Department Of Ayush, Delhi, 2nd Edition, Chapter 18/3 Page 600.
2. Rasamrita 3/159, Vaidya Yadavji Trikramji, Motilal Banarsi Das, Varanasi.
3. Rasa Tarangini By Pandit Sadanand Sharma, Shree Kashi Nath Shastri, Motilal Banarsidas, Delhi, Chapter 21/255-258
4. Sharangadhara Samhita- Shree Radha Krishna Parashr, Vaidyanath Ayurveda Bhavan, 4th edition 1994.
5. Bhavprakash Nighantu, Shree Brahama Shankara Shastri, Chaukambha Sanskrit Series Office Varanasi 1969.
6. Dravyaguna Vigyana, Acharya Priyavrata Sharma, Chaukhambha Bharti Prakashan, Chapter 2 Page No.123
7. Dravyaguna Vigyana, Acharya Priyavrata Sharma, Chaukhambha Bharti Prakashan, Chapter 5, Page No.345 And 430.

Source of Support: Nil
Conflict of Interest: None Declared

How to cite this URL: Nirmala Kushwaha & Urmila Waxar: A Comparative Pharmaceutico-Analytical Study Of Kasisa Bhasma Prepared By Two Methods W.S.R. To Marana Dravyas. International Ayurvedic Medical Journal {online} 2020 {cited November, 2020} Available from: http://www.iamj.in/posts/images/upload/4969_4976.pdf