



Research Article

www.ijrap.net (ISSN:2229-3566)



PHARMACEUTICAL STUDY OF VANGA BHASMA

Manish Kumar Saini ^{1*}, Meemansa ², Parimi Suresh ³

¹ Assistant Professor, Department of Rasa Shastra and Bhaishajya Kalpana, SDAMCH and RC, Mathura, Uttar Pradesh, India

² Assistant Professor, Department of Prasuti Tantra and Striroga, SDAMCH and RC, Mathura, Uttar Pradesh, India

³ Ex-Professor, Department of Rasa Shastra and Bhaishajya Kalpana, National Institute of Ayurveda, Jaipur, Rajasthan, India

Received on: 20/07/20 Accepted on: 29/08/20

*Corresponding author

E-mail: manishravi007@gmail.com

DOI: 10.7897/2277-4343.1105145

ABSTRACT

Pharmaceutical study gives emphasis to prepare drugs in a standard manner and to dispense it. Vanga is classified as a Puti Loha. Here the Puti means bad smell, obnoxious or dirty. All three metals mentioned in this group emit obnoxious smell, while they are melting. Vanga has been widely described in our texts and several therapeutic properties have been stated. Much importance has been given to its efficacy as Vrishya and as a therapy for Meha Roga. The Aim of this study is to prepare Vanga bhasma as per classical guidelines. Raw Vanga metal, plant materials and other drugs used for shodhana, marana, Jarana were collected mainly from pharmacy, N.I.A., Jaipur. Buttermilk (Takra) and Gomutra were obtained from nearby shop and cow husbandry. The Vanga bhasma was prepared following Reference of Siddha Bhaishajya Mani Mala in the Department of Rasa Shastra and Bhaishajya Kalpana, N.I.A., Jaipur. In present study total 470 gm of raw Vanga was taken, after Shodhana process 463 gm Vanga was obtained. Further by the process of Jarana 440 gm Vanga was yield. From which 420 gm was used in Marana process, from which ultimately total bhasma of Vanga obtained was 438 gm.

Keywords: Vanga Bhasma, Shodhana, Marana, Jarana

INTRODUCTION

Pharmaceutics is the science as well as an art of preparing and dispensing drugs. The achievement of treatment depends upon skillful preparation of the drug by using authentic material and following the traditional processes. Ayurvedic pharmaceutics is primarily deals with plant processing and mineral processing. The methods involved in mineral processing are Shodhana, Marana, Jarana and Satvapata etc. The aim of Ayurvedic pharmaceutics is drug manufacturing by following authenticated classical formulations, in terms of ingredients, media and procedures.

In Ayurvedic classics Lohas are defined as, "Luh Apakarshanat Iti Loha" means which is obtained by extraction from ores or which extracts disease conditions from the body. There are seven metals described in classical literature i.e. Swarna, Rajata, Tamra, Loha, Vanga, Naga and Yashada. These Dhatus classified in Shuddha Loha, Puti Loha and Mishra Loha. The metals having low melting point and produce bad odour on heating are described under Puti Loha¹. Vanga is one of such metal having wide range of therapeutic values. Generally, the literature prescribes two types of Shodhana process for most of the drugs i.e. Samanya and Vishsha. Almost all classics described Kshepana/Dhalana (Quenching) process for Shodhana especially for the Puti Loha which are having low melting point. Metals are heated to molten state and poured into specific liquids is known as Dhalana/Quenching². For Puti Loha the procedures for Marana will have to be supervised by Shodhana and Jarana etc pre pharmaceutical and intermediary processes. Vanga Bhasma is having Tikta, Ruksha, Ushna Guna and Prameha nashana, Medoghnam properties³.

Aims and Objectives of Pharmaceutical Study

To prepare the Vanga Bhasma as per the classical guidelines

MATERIALS AND METHODS

Collection and Preparation of Required Materials for Samanya Shodhana (simple purification) and Vishsha Shodhana (Special purification)

Vanga (Tin), all plant materials, Tila Taila were procured from Rasayana Shala; Pharmacy of National Institute of Ayurveda, Jaipur.

Collection of Takra

Takra (Buttermilk) was collected from the Saras dairy under Rajasthan Co-operative Dairy federation, Jaipur, for the further use in Shodhana of Vanga.

Collection of Gomutra

Gomutra (Cow urine) was collected early morning from the Goshala, local Cow husbandry, Jaipur. Cow urine was kept in glass jar for 1 hour, before using it for Dhalana process; it was strained through a cloth piece.

Preparation of Kanji

Kanji (Sour rice gruel) was prepared in departmental lab N.I.A., Jaipur.

Procedure: In order to prepare Kanji, Firstly Shali rice (1 kg) cooked with 5 times of water (5 kg) and total cooked rice obtained was 4.5 kg. Then Mustard oil (200 ml) was heated in an iron pan and Hingu (Asafetida-50 gm), mustard seeds (250 gm), Haridra (turmeric- 100 gm) and bamboo leaves (20 in number) were added to it. The same was transferred to the cooked Shali rice. Rock Salt (20 gm) and the radish (500 gm) which was chopped into small pieces were added to the cooked rice. Three times of water was added to the cooked cooled rice (almost 13.5 kg). Whole material was transferred to a sterile storage container, which was previously fumigated by dhoopana karma. The container was tightly packed by clay and cloth and allowed for fermentation at room temperature. The completion of the process was detected by burning matchstick extinguishing test. After the completion of process, the supernatant clear liquid was siphoned out by using tube. Fermentation process material was filtered through the cotton cloth and filtrate was kept in another clean Jar. Total kanji obtained was 12 liters.⁴

Preparation of Kulattha Kwatha

Kulattha Kwatha (horse gram decoction) was prepared following Sharangadhara Samhita guidelines⁴⁻⁵. The Kulattha was procured from local market, hence the Kulattha is hard to cook hence they were reduced to coarseness and needed to be soaked overnight for proper cooking. For preparing the kwatha 16 times of water was added. After heating, total volume of 6 L was obtained.

Preparation of Nirgundi Patra Swarasa

Nirgundi patra (Leaves of *Vitex negundo* Linn.) were collected from local garden and though it is difficult to squeeze out the juice (Swarasa) from crushed leaves, 1-liter water was added to 5 kg of leaves and 3 liters of Juice extracted.

Collection of Jarana dravyas

Here Jarana means to assimilate the herbal drug materials in the melted Vanga metal. Haridra (Turmeric), Ajawain Lavanga, Pippali Chhal (Bark), Imali Chhal, Jeeraka and Apamarga are the seven Jarana dravya, those were collected from the NIA pharmacy in dried form on the basis of classical text Siddha Bhaishaja Manimala.

Collection of Marana Dravyas

Marana is the process of making bhasma, for this Kumari Swarasa (*Aloe vera* juice) was needed; collected from Herbal Garden, N.I.A., Jaipur.

Methods Adopted in Vanga Shodhana, Jarana and Marana:

- The method mentioned in Rasa Ratna Samucchaya was followed for Samanya and Vishesha Shodhana of Vanga.
- The method mentioned in Siddha Bhaishaja Manimala was followed for the Jarana of Vanga.
- The method mentioned in Rasamrita was followed in Marana of Vanga.

Pharmaceutical Study

All the steps of Shodhana, Jarana and Marana are included in pharmaceutical study.

Samanya Shodhana of Vanga

In Samanya Shodhana total 5 procedures are included according to media that are; respectively Shodhana in Tila Taila (Sesame oil), Takra (Buttermilk), Gomutra (Cow-urine), Kanji (Sour rice gruel), Kulattha Kwath (horse gram decoction) as per Rasa Ratna Sammucchya⁶.

Principle: Dhalana/Kshepana (Quenching)

Procedure: Pittahara Yantra was prepared by using Ulukhala (Mortar) covered with a Sharava (Shallow earthen vessel) with a hole in center. Tila taila etc. were taken double to amount of Vanga (V/W) was filled into Pittahara Yantra, in which melted Vanga metal to be poured. Raw Vanga was taken in long handled iron ladle (Loha Darvi) and heated on Gas stove. After complete melting it was immediately poured in Taila, which was filled in the Pittahara Yantra this is called Dhalana. Then Vanga was collected from media and same process was repeated again. The process was repeated 7 times with Taila, and the same process was done with other liquid media in order of Takra, Gomutra, Kanji and Kulattha Kwatha. (Table 1 to 5)

Precautions

For every time in Dhalana (quenching), fresh liquid media was taken. After Dhalana in each media, the Vanga was washed with hot water to remove excess oil, Takra etc. Vanga was weighed before and after every quenching by using digital weighing machine. Temperature of liquid media, before and after quenching was measured by using thermometer. Temperature of Vanga was also documented before quenching, at the time when it starts melting and when it completely melted by pyrometer. Time duration was also noted in every Dhalana process, and the time when it started melting and completely melted were also documented. pH of media was also checked and noted before and after quenching (Excluding Taila, because pH is not applicable for it). The whole procedure was observed keenly for detailed behavioral patterns of the metal as well as the media.

OBSERVATION

Table 1: Observations of Vanga Shodhana in Tila Taila during Dhalana process

S. No.	Wt of Vanga (gm)		Volume of oil (ml)		Temp. of oil (°C)		Started melting and completely melted at which min and at what temp (°C)		Specific gravity
	Before	After	Before	After	Before	After	Started melting	Completion	
1.	470	472.2	800	795	21.2	52	4:33 (152)	6:30 (240)	0.956
2.	472.2	473.6	800	793	21.2	59	2:29 (216)	4:05 (245)	0.957
3.	473.6	475	800	793	21.2	62	2:47 (193)	3:45 (228)	0.959
4.	475	476	800	795	21.2	53	2:43 (185)	4:17 (236)	0.958
5.	476	476.8	800	796	21.2	64	2:05 (170)	4:15 (234)	0.961
6.	476.8	477	800	794	21.2	58	3:22 (158)	4:25 (204)	0.959
7.	477	477.3	800	792	21.2	51	3:38 (136)	4:53 (230)	0.958

Table 2: Observations of Vanga Shodhana in Takra during Dhalana process

S. No.	Wt of Vanga (gm)		Volume of Takra (ml)		Temperature of Takra (°C)		Started melting and completely melted at which min and at what temperature (°C)		pH of media		Specific gravity
	Before	After	B	A	B	A	Started melting	Completion	B	A	
1.	476	478.2	800	785	21.1	45	1:40 (164)	6:36 (232)	4.4	4.3	1.0086
2.	478.2	481.7	800	790	21.1	46	3:26 (167)	10:15 (252)	4.4	4.5	1.0085
3.	481.7	483	800	786	21.1	44	4:38 (140)	13:50 (278)	4.4	4.6	1.0087
4.	483	484.3	800	791	21.1	47	4:10 (156)	15:00 (288)	4.4	4.6	1.0088
5.	484.3	486	800	789	21.1	45	4:22 (134)	13:15 (276)	4.4	4.5	1.0088
6.	486	488.9	800	785	21.1	43	4:43 (140)	13:20 (290)	4.4	4.6	1.0090
7.	488.9	492	800	790	21.1	41	5:50 (136)	13:50 (255)	4.4	4.5	1.0090

Table 3: Observations of Vanga Shodhana in Gomutra during Dhalana process

S. No.	Wt of Vanga (gm)		Volume of Gomutra(ml)		Temperature. of Gomutra (°C)		Started melting and completely melted at which min and at what temperature (°C)		pH of media		Specific gravity
	B	A	B	A	B	A	Started melting	Completion	B	A	
1.	480	483.1	800	784	27	39	2:16 (204)	8:20 (223)	8.1	8.2	1.0149
2.	483.1	485	800	790	27	43	5:16 (150)	11:14 (210)	8.1	8.2	1.0151
3.	485	486.2	800	795	27	40	4:38 (178)	11:20 (240)	8.1	8.2	1.0156
4.	486.2	459.3	800	720	27	39	4:47 (190)	9:30 (279)	8.1	8.4	1.0155
5.	459.3	461	800	779	27	39	5:40 (162)	11:02 (265)	8.1	8.3	1.0155
6.	461	461.7	800	791	27	42	4:49 (169)	11:18 (248)	8.1	8.3	1.0152
7.	462.9	464.4	800	788	27	42.3	4:35 (160)	9:55 (210)	8.1	8.4	1.0148

Table 4: Observations of Vanga Shodhana in Kanji during Dhalana process

S. No.	Wt of Vanga (gm)		Volume of Kanji (ml)		Temperature. of Kanji (°C)		Started melting and completely melted at which min and at what temperature (°C)		pH of media		Specific gravity
	B	A	B	A	B	A	Started melting	Completion	B	A	
1.	452.5	454.2	800	790	26.6	42	2:50 (180)	8:54 (202)	3.4	3.6	1.0751
2.	454.2	457.2	800	792	26.6	46.8	3:37 (146)	9:19 (236)	3.4	3.5	1.0757
3.	457.7	458.3	800	790	26.6	51.8	2:54 (168)	7:38 (226)	3.4	3.5	1.0756
4.	458.3	459.8	800	786	26.6	50.8	4:04 (180)	9:17 (213)	3.4	3.5	1.0756
5.	459.8	461.7	800	788	26.6	48.3	2:33 (179)	8:15 (221)	3.4	3.6	1.0758
6.	461.7	463.6	800	790	26.6	47.8	3:25 (181)	8:15 (243)	3.4	3.7	1.0757
7.	463.6	464.5	800	790	26.6	55.2	2:17 (162)	8:05 (258)	3.4	3.6	1.0757

Table 5: Observations of Vanga Shodhana in Kulattha Kwatha during Dhalana Process

S. No.	Wt of Vanga (gm)		Volume of Kwatha (ml)		Temperature. of Kwatha (°C)		Started melting and completely melted at which min and at what temperature (°C)		pH of media		Specific gravity
	B	A	B	A	B	A	Started melting	Completion	B	A	
1.	455	457.8	800	786	27.7	50.8	4:07 (205)	8:05 (234)	6.0	6.1	1.0795
2.	457.8	458.5	800	795	27.7	51	3:05 (203)	9:07 (253)	6.0	6.2	1.0792
3.	458.5	460.8	800	794	27.7	53	4:52 (232)	8:43 (239)	6.0	6.1	1.0792
4.	460.8	462	800	785	27.7	52	3:57 (228)	8:46 (224)	6.0	6.3	1.0796
5.	462	463.5	800	790	27.7	49	3:39 (222)	8:32 (236)	6.0	6.0	1.0795
6.	463.5	465	800	785	27.7	51	4:40 (196)	10:01 (240)	6.0	6.5	1.0800
7.	465	466.4	800	789	27.7	48	4:00 (219)	10:05 (243)	6.0	6.6	1.0838

*Here B = Before, A = After

Vishesha Shodhana of Vanga by Haridra (Turmeric) Churna and Nirgundi Patra Swarasa

Principle: Shodhana by Dhalana

Procedure: Samanya Shodhita Vanga was taken in a ladle and heated up to melting. Nirgundi Patra Swarasa mixed with Haridra (Turmeric) Churna was kept in Pittahara Yantra; Molten Vanga was poured into it. After cooling, Vanga was collected and same procedure was repeated for two more times. Each time fresh Nirgundi Patra Swarasa mixed with Haridra (Turmeric) Churna was used. (Table 6)⁷

Table 6: Observations of Vanga Shodhana in Nirgundi Patra Swarasa mixed with Haridra (Turmeric) Churna during Dhalana process

S. No.	Wt of Vanga (gm)		Volume of Swarasa (ml)		Temperature. of Swarasa (°C)		Started melting and completely melted at which min and at what temperature (°C)		pH of media		Specific gravity
	Before	After	B	A	B	A	Started melting	Completion	B	A	
1.	459.6	462.4	800	780	30	49	2:25 (203)	6:05 (238)	5.5	5.8	1.0808
2.	464.3	465	800	785	30	51	3:35 (211)	10:27 (257)	5.5	5.7	1.0804
3.	466.6	468	800	787	30	48	6:32 (160)	11:37 (261)	5.5	5.9	1.0808

Table 7: Observations of weight of Vanga during Vanga Shodhana in all Dhalana process

S. No.	Media taken for Shodhana/Dhalana	Total Ashodhita Vanga Taken progressively (gm)	Suddha Vanga obtained after Quenching (gm)	Weight of Vanga after Drying (gm)	Change in weight (gm)
1.	Tila Taila	470	477.3	476	+ 6 gm
2.	Takra	476	492	480	+ 4 gm
3.	Gomutra	480	464.4	452.5	- 17.5 gm
4.	Kanji	452.5	464.5	455	+ 2.5 gm
5.	Kulattha Kwath	455	466.4	459.6	+ 4.6 gm
6.	Haridra (Turmeric) Churna + Nirgundi Patra Swarasa	459.6	468	463	+ 3.4 gm

Vanga Jarana

Jarana process is to assimilate or digest the herbs in melted Vanga metal.⁸

Table 8: Weight of used drug materials in Jarana

S. No.	Materials used	Botanical names	Wt.
1.	Shodhita Vanga	<i>Stannum</i>	463 gm
2.	Haridra (Turmeric)	<i>Curcuma longa</i> Linn.	70 gm
3.	Ajawain/Yavani	<i>Trachyspermum ammi</i> Linn.	56 gm
4.	Lavanga	<i>Syzygium aromaticum</i> Linn.	44 gm
5.	Imali Chhal	<i>Tamarindus indica</i>	132 gm
6.	Jeeraka	<i>Cuminum cyminum</i> Linn.	30 gm
7.	Apamarga Panchanga	<i>Achyranthes aspera</i> Linn.	130 gm
8.	Pippali Chhal	<i>Ficus religiosa</i> Linn.	130 gm

Procedure: All the herbal drugs were dried under sunlight and pulverized to form coarse churna and was collected in a tray. Shuddha Vanga was taken in wide mouthed iron vessel (Kadhahi) and the vessel was placed over intense fire. To the molten Shuddha Vanga, little by little amount of Haridra (Turmeric), Ajawain, Lavanga, Pippali Chhal, Imali Chhal, Jeeraka and Apamarga were added in respective order (Table 8). These were

rubbed thoroughly with the base of a big iron spoon in the Kadhahi. The process was continued till all the Shodhita Vanga was turned into fine powder form completely. All the powder was collected at the centre, closed by a Sharava and intense heat was given for three hours. The fire was withdrawn after the bottom of iron pan turned red hot and then allowed to cool down.

Table 9: Results after Jarana of Shodhita Vanga

Wt. of Shodhita Vanga	Wt. of Jarana dravya	Duration	Wt. of Vanga after Jarana	Weight loss	Color
463 gm	534gm	10.30 Hours	440 gm	23 gm (5.2%)	Dull white

Special note: After Jarana total 440 gm Vanga was obtained but for Marana 420 gm is used. Rest 20 gm bhasma was preserved for other laboratory studies

Vanga Marana

Procedure: Marana process or making of bhasma can be divided into two sub-divisions- Bhavana and Puta.

1. Bhavana

Bhavana is a process of pulverization or trituration by adding a liquid form material to a powder. Jarita Vanga was taken in a Khalvayantra (Mortar with pestle), Kumari Swarasa (*Aloe vera* juice) was added and triturated till it becomes suitable for pellets/ Chakrika preparation. Pellets of size 3 cm diameter and 0.5 cm thickness were prepared, dried in shade and weighed. Dried pellets were arranged in a Sharava (shallow earthen vessel) and kept one Sharava on other and by sealing the edges of both the

Sharava with the cloth pieces a round box shaped structure that is Samputa is prepared.¹⁰

2. Puta

Puta means heating process or measurement of heat needed to make bhasma. The prepared smeared Samputa was subjected to heat in electric muffle furnace by raising the temperature by 50°C at regular intervals of 30 minute. Till it reached 550°C, maintained at this temperature for 1 hour, then switch off the furnace and allowed to cool down to room temperature. After self-cooling the Samputa was removed from the furnace, outer part cleaned and opened. Bhasma was weighed and subjected for Bhasma Pariksha. Same process was repeated for ten times to obtain Vanga Bhasma. After 10th of Puta the Bhasma was compiled all the classical tests. (Table 10)⁹

Table 10: Observation during Marana of Vanga

Date	No. of Puta	Wt of Vanga before Bhavana	Wt of Bhavana dravya	Wt of Vanga after Bhavana	Given temperature (°C)	temperature given for following hours	Wt after Puta
25/4/18	1 st	420 gm	120 gm	427 gm	650 °C	4 hr 30 min	422 gm
28/4/18	2 nd	422 gm	100 gm	428 gm	550 °C	6 hr	424 gm
5/5/18	3 rd	424 gm	120 gm	432 gm	550 °C	6 hr	429 gm
7/5/18	4 th	429 gm	120 gm	435 gm	550 °C	6 hr	430 gm
16/5/18	5 th	430 gm	120 gm	436 gm	550 °C	6 hr	432 gm
19/5/18	6 th	432 gm	120 gm	440 gm	550 °C	6 hr	435 gm
22/5/18	7 th	435 gm	120 gm	441 gm	550 °C	6 hr	437 gm
31/5/18	8 th	437 gm	120 gm	440 gm	550 °C	6 hr	437 gm
9/6/18	9 th	437 gm	120 gm	443 gm	550 °C	6 hr	437 gm
15/6/18	10 th	437 gm	120 gm	452 gm	550 °C	6 hr	438 gm

Bhasma Pariksha

The prepared sample of Vanga Bhasma was subjected for classical tests/examinations to check the quality and it was seen that the sample complied with all the tests i.e. Rekhapurnatva (filling in between the fingerprints), Varitaratva (swim/floats over water), Unama (rice particle held on bhasma both floating over water), Nishchandrata (not any lustre like of metal particle), Niswadu (tasteless) etc.

RESULTS AND DISCUSSION

As such the Rasa Shastra and Bhaishajya Kalpana have laid emphasis on cautious approach in the manufacturing of medicines. It has given due importance from starting material to finished product. In Classics the Rasa Aushadhis have given more importance over the Kashtha Aushadhis (herbal drugs) because of less dose sufficiency, palatability properties and they give instant Aarogya or relief in comparison to Herbal preparations¹¹. In present study total 470 gm of raw Vanga was taken, after Shodhana process 463 gm Vanga was obtained. Further by the process of Jarana 440 gm Vanga was yield. From which 420 gm was used in Marana process, from which ultimately total bhasma of Vanga obtained was 438 gm.

Shodhana

The Vanga was subjected to both Samanya and Vishesh Shodhan following the method mentioned in Rasa Ratna Samucchaya. It took two months' time for total completion of the Samanya shodhana. (Table 7)

Dhalana in Tila Taila

The tila taila was change from initial brownish tinge to little dark in colour. Almost 15 ml of oil was lost on an average after every quenching and after every pouring the oil acquired increase in temperature of 30- 40°C. The Vanga started melting in 2 minute and took nearly 6 minutes for complete melting. The reason for early melting is might be due to catching of fire by the tail adhered to Vanga after 1st pouring. (Table 1)

Dhalana in Takra

The takra was procured from Saras dairy. The pH of the original takra was acidic with the readings of 4.4 which were altered by 2 points after decimal. The time for complete melting took little longer time as the water content present in the takra made the metal to melt late. The takra showed the curdled appearance be due to pouring of the hot molten metal might has made coagulated the suspended particles An Increase of 7 g in weight was noticed

might be due to presence of some remnant portion of takra. (Table 2)

Dhalana in Gomutra

The Gomutra was procured from local cowshed and the pH was weakly alkaline in nature which was changed by few points following decimal after pouring of hot molten metal. The specific gravity also changed following pouring as most of the water content vaporized during the process and the changes took place in suspending materials. The emitting of the ammonia smell because the media used was urine. (Table 3)

Dhalana in Kanji

In Preparation of kanji the time taken for the completion was 1-month time, the reason was because it was manufactured during the winter season. The pH of the filtrate was 3.4 means acidic. The total Kanji yield was 12 L in which solid content was of 1.15%. No much variation either in volume reduction, pH or specific gravity etc following Shodhana or quenching in Kanji. (Table 4)

Dhalana in Kulattha Kwath

The Kwatha showed weakly acidic pH as evident by the pH value of 6.5 and with the total solid content of 12.5%. In Kulattha kwatha also no noticeable change except specific gravity was observed. (Table 5)

Dhalana in Haridra Churna and Nirgundi Patra Swarasa

Swarasa obtained showing acidic pH of 5.5. By the end of the process most of the Vanga was converted to powder form. Overall, after Vishesh Shodhana a loss in weight by 3.4 gm (0.7234%) was noticed which was very minimum in terms and the loss was within normal limits. (Table 6)

Jarana

The Jarana process was carried out following the reference mentioned in Siddha Bhaishajya Manimala deviating from the general Apamarga Panchanga etc drugs since the final product to be explored for its effect in diabetes hence the method mentioned in Siddha Bhaishajya Manimala was followed. Jarana process took almost 10 hours 30 minutes to complete. (Table 8, 9)

Marana

After the first two Puta color of Chakrikas was grayish white and hard in consistency. The color was just on the outer surface of Chakrikas which appeared as a coating. When the Chakrikas were

broken inner surface was dull white. In the successive Putas the color changed from grayish white to white and the consistency changed from hard to soft. After 3rd and 4th Putas all the Chakrikas were found broken in the form of powder and was smooth in touch. After 5th and 6th Puta bhasma became very soft in touch and the color of the Bhasma became dull white. After ten Putas Bhasma became very fine, and easily passed through 200 Mesh. In each Puta the maximum temperature was maintained for one hour, which was increased up to 550°C in all Putas. Increase in weight of Vanga bhasma was also noted after each Puta. After drying of upper surface, the pellets were turned upside down to ensure proper drying of whole material. It took 10 Puta for preparing Vanga Bhasma. In Puta process temperature was raised gradually up to 550°C and maintained for 1 hour. Some difference was observed before and after weight of Jarita and Marita bhasma may be due to adding up of some substance during levigation and during marana oxidation of the Vanga happened, so it increased some weight. All the classical parameter of Bhasma Pariksha was passed by the Marita bhasma after 10th Puta. (Table 10)

CONCLUSION

Vanga Bhasma is prepared following the classical references i.e. Rasa Ratna Samucchaya, Siddha Bhesaja Manimala, Rasamrita etc. and prepared bhasma is tasteless, odorless and very fine, hence complies all the Bhasma Pariksha mentioned in classics. The present study can be a platform for the further research works for generating the safety and efficacy data to use Bhasma in disease concern.

REFERENCES

1. Rasa Ratna Samucchaya, Shri Vaidyapati Singhgupt Vagbhatacharya, Vigyan Bodhini Hindi commentary by Professor Duttatreya Kulkarni, Part I, Meharchand Lacchmandas Publications, New Delhi, Reprint year, Chapter 5/1; 2007. p. 89.
2. Rasa Tarangani, Shri Sadananda Sharma, edited by Kashinath Shastri, Dwitiya Taranga, chapter name Paribhasha Vigyaniya, 8th edition, Motilal Banarasidas, Delhi, Year; Shloka 36; 2014. p. 18.
3. Rasa Ratna Samucchaya, Shri Vaidyapati Singhgupt Vagbhatacharya, Vigyan Bodhini Hindi commentary by Professor Duttatreya Kulkarni, Part I, Meharchand Lacchmandas Publications, New Delhi, Reprint year, Chapter 5/155; 2007. p. 124.
4. Rasa Ratna Samucchaya, Shri Vaidyapati Singhgupt Vagbhatacharya, Vigyan Bodhini Hindi commentary by Professor Duttatreya Kulkarni, Part I, Meharchand Lacchmandas Publications, New Delhi, Reprint year, Chapter 11, Kanjika Nirmana; 2007. p. 217.
5. Sharangadhara Samhita, Acharya Sharangadhara, Jiwanprada Hindi commentary, by Dr. Shailaja Shrivastava, Chaukhambha Orientalia, Varanasi; Reprint year, Madhyam Khanda, Chapter 2, Shloka 1-2; 2016. p. 135.
6. Rasa Ratna Samucchaya, Shri Vaidyapati Singhgupt Vagbhatacharya, Vigyan Bodhini Hindi commentary by Professor Duttatreya Kulkarni, Part I, Meharchand Lacchmandas Publications, New Delhi, Reprint year, Chapter 5/13; 2007. p. 93.
7. Rasa Ratna Samucchaya, Shri Vaidyapati Singhgupt Vagbhatacharya, Vigyan Bodhini Hindi commentary by Professor Duttatreya Kulkarni, Part I, Meharchand Lacchmandas Publications, New Delhi, Reprint year, Chapter 5/156; 2007. p. 124.
8. Siddha Bhesaja Manimala, Mahakavi Sri Krishnaram Bhatta, Vaishwanara Hindi commentary by Sri R. Kaladhara Bhatta, 4th edition, Chaukhambha Krishnadas Academy, Varanasi; Year, Chaturtha Gucca, Chapter name Prameha Chikitsa, Shloka 2-3; 2008. p. 251.
9. Rasamrita, Yadavji Trikamji Acharya, Commentary by Dr. Devnath Singh Gautam, Chaukhamba Surabharati Prakashan, Varanasi; Year, Chapter 3rd Loha Vigyaniya, Shloka 94; 2014. p. 45.
10. Rasa Tarangani, Shri Sadananda Sharma, edited by Kashinath Shastri, Dwitiya Taranga, Chapter name Paribhasha Vigyaniya, 8th edition, Motilal Banarasidas, Delhi, Year; Shloka 49; 2014. p. 21.
11. Rasa Ratna Samucchaya, Sri Vagbhata, Tatvartha Vibodhini Hindi commentary by Pt. Dharmananda Sharma, 2nd edition, edited by Atrideva Gupta, Motilal Banarasidas, Delhi; reprint year, Chapter 28th, Loha kalpa, Shloka 1; 1996. p. 459.

Cite this article as:

Manish Kumar Saini *et al.* Pharmaceutical study of Vanga Bhasma. Int. J. Res. Ayurveda Pharm. 2020;11(5):77-82 <http://dx.doi.org/10.7897/2277-4343.1105145>

Source of support: Nil, Conflict of interest: None Declared

Disclaimer: IJRAP is solely owned by Moksha Publishing House - A non-profit publishing house, dedicated to publishing quality research, while every effort has been taken to verify the accuracy of the content published in our Journal. IJRAP cannot accept any responsibility or liability for the site content and articles published. The views expressed in articles by our contributing authors are not necessarily those of IJRAP editor or editorial board members.