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**ROLE OF KUMARI SWARASA IN THE MARANA PROCESS OF SUDHA VARGA DRAVYAS WITH SPECIAL REFERANCE OF GODANTI BHASMA PREPARED BY TWO DIFFERENT METHODS**

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**ABSTRACT**

In *Rasashastra* various herbal drugs are used for the *Shodhan* and *Marana* process of metals and minerals. Herbal drugs are used to purify, to reduce toxicity and to make it assimilate in the body. And mainly to convert inorganic metal and mineral into organic form. It is observed that for the *Sudha varga dravyas Kumari swarasa* (Aloe Vera Juice) is used for *Shodhan* and *Marana* process. To find out the role of *Kumari* in these processes research was done on *Godanti bhasma*. *Godanti bhasma* is prepared by two methods, one by giving only *puta* without *bhavana* and another method by giving *bhavana* of *Kumari swarasa* and then *puta* is given. Both the samples are analyzed with the help of ayurved and modern techniques like SEM, XRD and observations are compared. It is observed that the method in which *Kumari swarasa* is used percentage of Calcium is more.

**Keywords:** *Kumari swarasa, Godanti, shodhan, marana*

**INTRODUCTION:** *Rasashastra* is the branch of Ayurveda which is related to the manufacturing of medicines. Various metals, minerals, oceanic and animal originated drugs are used to prepare the medicine. *Sudhavarga* includes drugs which are found in ocean and some animal originated drugs which contain *Sudha* means Calcium. *Sudha varga dravyas* are *Shankha, Shukti, Prawal, Kapardika, Mouktik, Godanti, Mrugashruna* etc<sup>1</sup>. These *dravyas* contains mainly Calcium Carbonate.

*Shodhan*<sup>2</sup>–*Shodhan* is not only the purification of the *dravyas* but it removes the *doshas*, removes the toxicity and converts into organic form for the easy assimilation in the body and also make suitable for the further *Marana* process. *Shodhan* of *Sudha varga dravyas* is mainly cleaning with the help of *Amla varga dravyas* or *Swedan* in *Amla varga*

*dravyas*. These *dravyas* are mainly oceanic product or animal originated so cleaning is required. It can be done with Hot water and *Amla rasa dravyas*.

*Marana*<sup>3</sup>–*Marana* means *Bhasmikiranana*. In this process metal or mineral is triturated with plant material and then Heat (*Putra*) is given. With the combination of organic matter and effect of heat *Bhasma* prepared is become organic, with very less particle size, light in weight. It can be easily assimilate in the body. *Marana* of these *dravyas* is done by giving only *puta* without giving *Bhavana* of any Herbal drugs<sup>4</sup>. Some of the authors have mentioned to give *bhavana* of *Kumari swarasa* and then *puta* is given. If the *bhasma* is not prepared completely then *Bhavana* of *kumara swarasa* is given and then subjected to *puta*<sup>5</sup>.

*Godanti* is selected for the study. It is easily available. It is used in *Jwara, Amlapitta* etc.

It is cost effective. It can be used in the place of *Pravala* which is readily available. *Marana* of *Godanti* is carried out by two methods. In first method *Kumari swarasa* is not used. Only *Putra* is given. In second method *Kumari swaras* is used for *Bhavana* and then *Putra* is given. Analysis is done by using modern techniques like SEM and XRD. The observations of this study are discussed in this article.

#### OBJECTIVES:

1. To prepare *Godantibhasma* by two different methods.
2. To analyze *Godantibhasma* with modern techniques.
3. To find out the role of *Kumariswarasa* in the *marana* process of *Godantibhasma*.

#### MATERIAL AND METHODS:

*Godanti*-Use of *Godanti* is first observed in *Rasa Tarangini*<sup>6</sup>

*Godanti* is Gypsum, chemically  $CaSO_4$ . It is white, lustrous, semitransparent containing layers.

Synonyms of *Godanti* - *Shirgola*, *Dhapan*, *Chirodi*

Characteristics of Proper *Godanti*<sup>8</sup> - *Godanti* which contain many thin layers, having luster, very clean like moon of *Sharad rutu* should be collected. In some text it is said that *Godanti* is type of *Hartala*. But it is not the variety of *Hartala*.

*Godanti Shodhan*<sup>9</sup> - *Shodhan* of *Godanti* is done by *Swedan* process. It is heated in *Nimbuswrasa* / *Dronpushpiswarasa* for 90 minutes.

*Marana* - For the study *Marana* of *Godanti* is done by 2 methods.

1. As per *Rasa tarangini* only *putra* is given. No any *bhavana* is given<sup>10</sup>.
2. As per *Rasamrut-6/6-Bhavana* of *Kumariswarasa* is given and then subjected to *Putra*<sup>11</sup>.

*Godanti* is collected and Authenticated.



*Shodhan* of *Godanti* - *Shodhan* of *Godanti* is done by *swedan* process of 3 hours in *Nimbuswrasa*.



Marana is performed by two methods.

**First method:**

1. *Shuddha Godanti churna* is taken 480 gm in *sharavsamputa*.
2. *Gajaput* of 100 cow dung cakes is given.
3. *Sharava* is taken out after cooling.

4. The *bhasma* prepared is taken into *Khalva yantra*.
5. *Bhasma pariksha* were carried out. The *bhasma* passes all *pariksha* in one *puta*.

**Table.1 OBSERVATIONS:**

Sr.No.	Tests	Godanti bhasma first method
1	Colour	Whitish
2	Taste	Tasteless
3	Odour	Odourless
4	Touch	Soft
5	<i>Varitaratva</i>	+
6	<i>Rekhapurnatva</i>	+
7	<i>Uman</i>	+
8	<i>Jichagre kach kach abhava</i>	+
9	<i>Niswadu</i>	+
10	Weight of <i>Godanti bhasma</i>	330 gm

**Second method:**

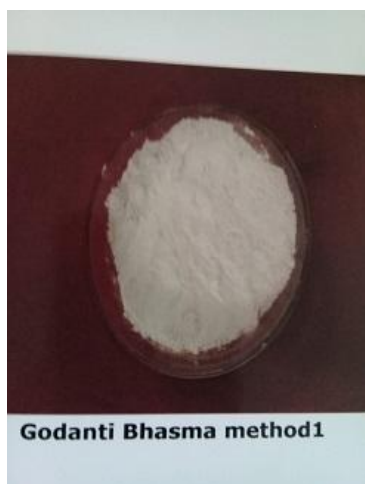
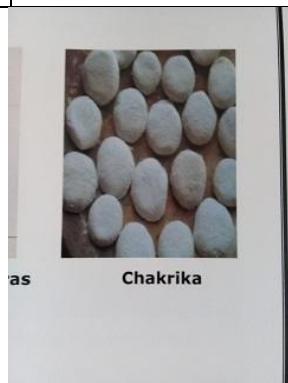
1. *Shuddha Godanti churna* is taken 480 gm in *khalva yantra*.
2. It is triturated with *Kumari swarasa* for 3 hours.
3. This *bhavana* process is repeated for 8 days.
4. After *bhavana* completed *chakrikas* were prepared and dried.

5. Dried *chakrikas* were put in *sharava samputa* and *Gajaput* of 100 cow dung cakes is given.
6. *Sharava* is taken out after cooling.
7. Taste of *bhasma* was sour so second *puta* of 100 cow dung cakes is given.
8. After second *puta* the *bhasma* passes all *bhasma pariksha*.

**Table.2 OBSERVATIONS:**

Sr.No.	Tests	Godanti bhasma Second method 1 <sup>st</sup> puta	Godanti bhasma Second method 2 <sup>nd</sup> puta
1	Colour	Greyish	GreyishWhite
2	Taste	Sour	Tasteless
3	Odour	Odourless	Odourless
4	Touch	Soft	Soft
5	<i>Varitaratva</i>	-ve	+
6	<i>Rekhapurnatva</i>	+	+
7	<i>Unam</i>	-ve	+
8	<i>Jichagre kach kach</i>	-ve	+

	<i>abhava</i>		
9	Niswadu	-ve	+
10	Weight of Godanti bhasma	370gm	320 gm



These two samples were collected and physicochemical analysis was carried out. *Bhasma* prepared by both methods are analyzed as per ayurvedic *bhasma pariksha*.

Then it is analyzed by modern instruments especially SEM and XRD

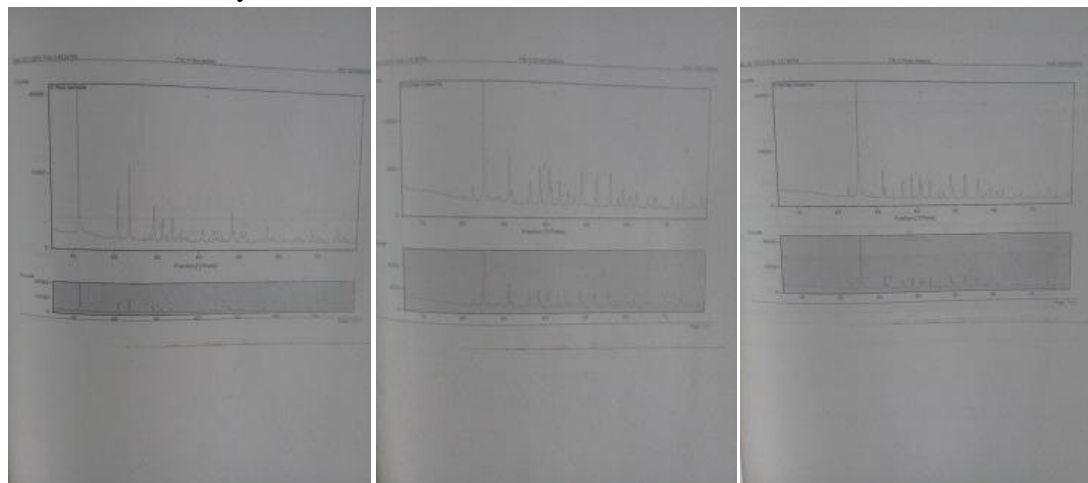
### OBSERVATIONS:

**Table No.3-Physicochemical Analysis of Godanti Bhasma**

SR. No.	Test Name	Method -1	Method-2
1	Loss on drying	0.04%	0.03%
2	Ash Value	98.72%	99.41%
3	Acid insoluble ash	60.67%	62.53%
4	pH	9.86	10.06
1	Fe	Nil	Nil
2	S	22.16	18.17

3	Si	59.45	28.62
4	Ca	8.43	8.02
5	Mn	0.10	0.06
6	Fineness of particles	80.62	82.02

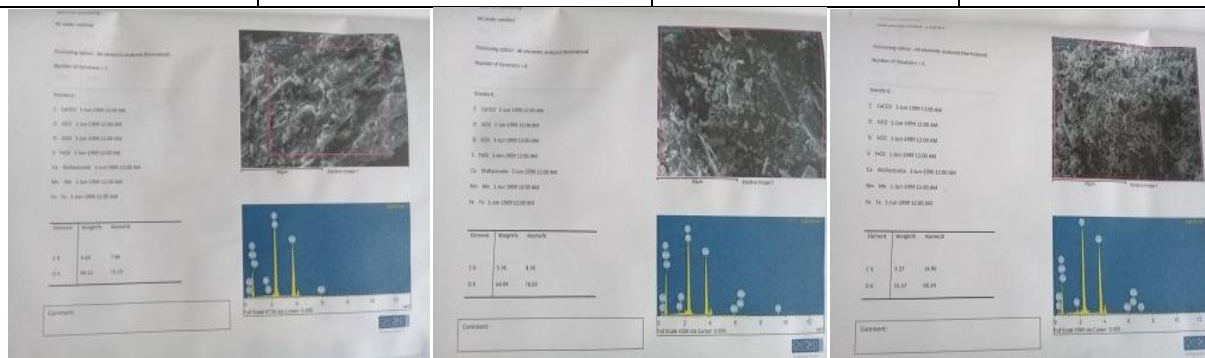
An XRD-Major peak indicates the presence of Calcium sulphate. Majority peak position i.e. of maximum intensity observed at 25.60 Position



XRD Images of Raw Godanti AND Godanti Bhasma First and Second Method

Table No.2-SEM

Element	Raw Godanti	Method-1	Method-2
C	5.36	4.60	9.37
O	64.94	60.11	55.57
Si	0.10	0.00	0.54
S	14.79	18.08	16.42
Ca	14.70	17.24	17.96
Mn	0.09	0.04	0.02
Fe	0.02	0.01	0.11



Raw Godanti

Godanti Bhasma –First Method, Godanti bhasma-Second Method

**DISCUSSION:** In *Rasagranthas bhasma* of *sudha varga dravyas* is prepared by giving direct puta without giving *bhavana* of any

plant material. Some authors or VruddhaVaidyas have mentioned the use of *Kumari swarasa* for the preparation of these

*bhasmas*. Also it is used if the proper *bhasma* is not prepared or the process of *marana* is not completed. Analysis of *Godanti bhasma* is carried out to see the effect of *Kumari swarasa*.

*Vruddha vaidyas* used *Kumari swarasa* for Preparation of *Sudha varga dravyas*. They have mentioned that *Kumari* contains Calcium which is important for the body. If *Kumari* is used for the preparation of *sudha varga bhasmas*, these *bhasmas* are easily absorb in the body

*Kumari swarasa* having many trace elements, amino acids, Vit, B1, B2, B3, B5, B6, B12 along with Ca, Mn, Zn, Ph, K etc<sup>12</sup>. The pharmacological action gets influenced by presence of these elements.

*Kumari* is having *Tikta*, *Madhurrasa*, *Vishaghna*, *Jwarahara*, *Kasa Shwasa nashak*, *Kushthahara*, *tridosahara*. These properties are increased due to *bhavanasanskara*<sup>13</sup>, size of particles also becomes less.

Due to *bhavana* process particle size is reduced and efficacy of *dravyas* is increased. It is stated in ayurvedic text that “*Mardanam Gunavardhanam*”

In the physicochemical analysis it is observed that the second method in which *Kumari swarasa* is used Percentage of Calcium is more. Percentage of Fe which is nil in raw *Godanti* is increased in *Bhasma*, Trace elements like Fe, Ph are present. Particle size becomes less. PH of *bhasma* is 10.6 i.e. alkaline in nature. Many trace elements of *Kumari* and their properties are also inducted in *Godanti bhasma*. These changes are occurred due to *marana dravya* and *bhavana sanskara*. So here we can

definitely see the role of *Marana dravya* i.e. *Kumari swarasa* in the preparation of *Godanti bhasma*.

**CONCLUSION:** From this study it can be stated that role of *marana dravya* or *bhavana dravya* and process of *bhavana* is important. Particle size of *bhasma* becomes less and chemical characters are also changed due to *bhavana dravya*. It also affects the efficacy of *bhasma*. Therefore various *marana* or *bhavana dravyas* are mentioned for the *marana* process of different *dravyas* in ayurvediya *Rasagranthas*. More advance techniques can be used to prove the role of *bhavana dravya*. Clinical study can be done to find out the efficacy of *bhasma* prepared by using different *marana dravyas*.

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