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RESERCH ARTICLE - STANDARDIZATION STUDIES ON *KASIS BHASMA*

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ABSTRACT

Bhasmas are unique formulations belonging to Ayurveda a leading and popular traditional Indian system of medicine. This group of medicines can work even in smaller doses and may even control incurable diseases effectively. *Bhasmas* essentially contain minerals and metals as integral part of formulations and are used after adopting proper purification process employing various purifying agents. Theses detoxification processes remove the toxic potentials from minerals and metals and impart a very high grade therapeutic efficacy. In the present work *Kasis Bhasma* prepared from raw *kasis* which comes under *Uprasa varga* as per *Rasa shastra* literature, is taken up and studied from Standardization point of view. *Kasisa Bhasma* was selected for study as the preparative procedure of *Kasisa Bhasma* is described very briefly in some of the most valuable *Rasa Gransthas* for its effect on *pandu roga. Niramlta* is basic and important *lakshan* of *kasis bhasma.*

Kasis Bhasma was prepared as per standard classical methods. Chemically analyzed at various stages of purification and the final product.

Keywords: *Rasa aushdhi, Rasgranth, Kasis bhasma, Niramlta, Pandu*

INTRODUCTION:

"*Bhasma prepration*"[1] is a special procedure of preparing Ayurvedic medicine from metals and minerals. It involves four basic steps such as selection of acceptable form of metal (*Grahya Rasa Dravya*), its purification by Ayurvedic method (*Shodhana*), levigation (*Bhavana*) and generation (*Maran* or *Puta*). Step, i.e. *Maran* or *Puta* needs to be modified. Because the material mentioned for *Maran,* i.e. *Puta* and cow dung cakes, varies from place to place.

In the present work *Kasis Bhasma* prepared from raw *kasis* which comes under *Uprasa varga*[2] as per *Rasa shastra* literature, is taken up and studied from Standardization point of view.

Niramlta is basic and important *lakshan* of *kasis bhasma*. *Kasis Bhasma* is described very briefly in some of the most valuable *Rasa Gransthas* including *Rasa Tarangini Rasa Ratna Samuchchaya*_and *Rasamrit.*

AIM AND OBJECTIVES

1. Pharmaceutical preparation of *kasis bhasm.*.
2. Standardization of *kasis bhasm Preparation.*
3. To *kasis bhasm* with Ayurveda and Modern parameters.

MATERIALS AND METHODS :

kasis (Green vitriol, ferrous sulphate), *Bhringraja* (Eclipta Alba) *Kanji* (sour gruel), were taken as per classical references and processed through the described methods.

There are two types of *Kasis*:[3]

In *Rasa Ratna Samuchchaya Valu Kasis* and *Pushpa Kasis* are named as two types.

Selection of *Grahya Kasis:* According to the reference, the *Pushpa Kasis* is

of *Grahya* type and used for medicinal purpose. Hence, *Pushpa Kasis* is selected to prepare *Kasis Bhasma*.

The preparation of *Kasis Bhasma* was divided into following manner:

1.*Shodhan* of *Kasis:-* [4]

For *Bhavana* method, it is described in *Rasamrita* 3/158 that in *Kasis Shodhana Bhavana* of *Bhringaraja Swarasa* is given thrice.

Material

Ashudha kasis 4kg

Bhrangraj swaras

Kanji

***Kasis Shodhana* (By *Bhavita*)**

Material: *Ashuddha Kasis*, *Bhringaraja Swarasa*

- Method: *Bhavana Vidhi* (wet grinding)
- Apparatus: Stone *Khalva Yantra* and pestle, spatula, tray, measuring glass.

Procedure:

Accurately weighed *Ashuddha Kasis* 4 kg was taken in *Khalva Yantra* and prepared fine powder.

Every time fresh *Bhringaraja Swarasa* was used.

Table 1. Showing *Bhavana* process for *shodhan*

DAY	RAW *KASIS*	SWARAS QUANTITY	WEIGHT INCREASE
1 day	4 kg	1.2 litter	80 grams
2 day	4.080 gram	1 litter	40 grams
3 day	4.120 gram	800 ml	Total-120grams

Results:

- Total time taken: 3 day for 3 *bhavna*
- Weight of *Ashuddha Kasis* : 4 kg
- Quantity of *Shuddha Kasis* obtained : 4.120 kg
- Weight Gain : 120 gram
- ***Kasis maran* [5] :-(R.T. 21/255-58)**

Shudha kasis 4.120 Grams

Table 2: *Bhavna* of *kanji* with observation: Results:

DAY	WEIGHT OF *KASIS*	NO. OF *BHAVANA*	DRYING HOURS	QUANTITY OF *KANJI*	INCREASE WEIGHT
1	4.120 gram	1st	6	1.5 litter	15 grams
2	4.135 gram	2nd	6	1.2 litter	13 grams
3	4.148 gram	3rd	6	1 litter	12 grams
4	4.160gram	4th	6	800 ml	12 grams
5	4.172 gram	5th	6	600 ml	08 grams
6	4.180 gram	6th	6	500 ml	10 grams
7	4.190 gram	7th	6	500 ml	Total - 70 grams

- Total time taken: 7 day, Weight of *shuddha Kasis* : 4.120 *kg*
- Quantity of *Kasis* obtained: 4.190 *kg* after drying, Weight gain: 70 *gram*
- After drying the pellets, they were kept in *Sharava* and were covered with another *Sharava* and Sealed with the mud smeared cloth and was kept in sunlight for drying purpose. Thereafter, *Sharava Samputa* was subjected to *Puta* (10 cow dung cake weight of 18.5 kg). After being *Swangasheeta* it was taken out and opened carefully. Pellets were taken, weighed and made into fine powder.
- In *Rasa Tarangini*, *Kukkutaputa* is advised for *Kasis Bhasma*. Size of *Kukkutaputa* should be equal to the size of cock, i.e. 35–45 cm in height and width, but the reference about the number of cow dung cakes is not available.

Table 3: *Maran process - Bhavna* and *puta* given chart with observation:

***Puta* no**	***Shuddha Kasis* (gm)**	***Bhavana Dravya (ml)***	***Weight of Chakrika (gm)***	**Weight of *Chakrika* After *puta(gm)***	**Colour**	**Hardness**	**pH**
1	4.120	6.1 litter *kanji* 7 *bhavana*	4.190	3.600	Dark brown	Soft	2.3
2	3.600	1.5 litter *nimbu swarasa bhavna*	3.650	3.350	Brownish red	Soft	2.6
3	3.350	1.5 litter *nimbu swarasa bhavna*	3.400	3.100	Brownish Red	Soft	3.2
4	3.100	1.2 litter *nimbu swarasa bhavna*	3.180	2.700	Red	Soft	4.84
5	2.700	800 ml *nimbu swarasa bhavna*	2.750	2.300	Brick Red	Soft	6.81
6	2.300	600 ml *nimbu swarasa bhavna*	2.330	1.750	Brick Red	Soft	7.21

According to the reference from *Rasa Tarangini*, after the first *Puta*, lavigation of *Kasis* was done in *Nimbu Swarasa* (extract of *Citrus acida*).Similar procedure was repeated for 6 times. After each *Puta*, the obtained *Bhasma* was tested for no sourness (*Niramlatva*) which is the main test for *Kasis Bhasma*.

Bhavana was given with *Nimbu Swarasa* for. Later *Chakrika* were prepared and kept under the sunlight to dry. After drying *Chakrika* were taken into *Sharava Samputa* and it was sealed with mud smeared cloth.

Then it was allowed to completely drying then it was subjected to *Putapaka* (10 cow dung cake weight of 18.5 kg). After self-cooling, the *Sharava Samputa* was taken out and opened carefully. The material was collected, weighed and made into powder form. The same procedure of *Bhavana* and *Putapaka* was repeated six times.

***Bhasma Pariksha*[6]**

After six *puta*, completely sour less *Kasis Bhasma* was obtained. The obtained *Bhasma* was tested for *Varitara, Apunarbhava, Niruttha, Rekha-purnatva Dantagre-kachkachabhav* for the elemental assay of Fe in *Kasis Bhasma*, total ash, and acid-insoluble ash.

Table 4: Prepared *Bhasma Pariksha:*

N0	**Classical Parameters**	**Prepared *Kasis Bhasma***
1	*Varna*	Red
2	*Rekhapurnatva*	Positive

3	*Varitara*	Positive
4	*Slakshanatva*	Positive
5	*Gatarasatva (Niramlatva)*	Positive

Table 5: Analytical test for *kasis bhasma:*

Sr. no	Test (Modern parameters)	Observation
1	pH	7.21
2	Loss on drying	3.60%
3	Ash value	44.58%
4	Acid insoluble ash	37.87%
5	Qualitative test for Iron	Positive (58.37%)

RESULT: From the above observations, it becomes clear that, the *Kasis Bhasma* is standard on ancient Ayurveda parameters as well as Modern parameters.

The significant value of Ph 7.21 (alkaline) this shows that *bhasma* is *Niramla* which is standard parameter for *kasis bhasma.*

DISCUSSION: In this study a step has been taken to introduce a standard operating procedure for the preparation of *Kasis Bhasma* at laboratory level.

The pharmaceutical process was divided into following steps.

For the *shodhan* of According to *Rasamrita*, three *Bhavana* of *Bhringaraja Swarasa* were given to 4 kg *Kasis* for three times. In this process it was observed that average 120 gm weight gain found in *Bhavana* method. Although it was accepted that after three *Bhavana* of *Bhringaraja Swarasa* would be obtained 4.120 kg. *Bhavana* of total 3 liter of *Bhringaraja Swarasa* was given to *Kasis*.

After *shodhan* of *kasish* for *Maran* process we prepare *Kanji.* This prepared *Kanji* was highly acidic in value having pH of 3.6. The acidic media of *Kanji* and starch of rice may have a role in reducing toxicity of *Kasis*.

In the preparation of *Kasis Bhasma* 4.120 kg *Shuddha Kasis* was taken, it was given 7 *Bhavana* of *Kanji* and pellets were prepared after 7th *Bhavana* dried and kept in *Sharava* and subjected to *Puta*. After *Puta Chakrika* were obtained carefully from the *Sharava* and they were triturated and obtained material was given 2nd *Bhavana* of *Nimbu Swarasa* and pellets were formed and subjected to *Puta*.

After this the obtained material was given once again *Bhavana* of *Nimbu Swarasa* and *Puta* was given such total 6 *Puta* were given to the material.

After 7th *Puta Kasis Bhasma* was obtained which has passed all the classical parameters.

Average 1.750 *Kasis Bhasma* was obtained from 4.120 kg.

That means average 42.47 % *Kasis Bhasma* was obtained.

CONCLUSION: Average 1.750 *Kasis Bhasma* was obtained from 4.120 kg. that means average 42.47 % *Kasis Bhasma* was obtained.

By subjecting it to *Bhasmikarana* process the ferrous sulphate change to ferric or ferrous oxide which imparts red coloured to it. Here *Kasis Bhasma* passed all the classical, physico-chemical parameters. So *Kasis Bhasma* should be considered as properly prepared and quality *Bhasma* having classical standards. *Kasis Bhasma* pH was found 7.21, which indicates *Bhasma* is Alkaline. Total Iron Content: 58.37 % w/w was observed in *Kasis*

Bhasma . *Kasis Bhasma* is only having ferric oxide and contains no H_20 in it.

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