



ISSN 2456-3110

Vol 5 · Issue 4

July-Aug 2020

Journal of
**Ayurveda and Integrated
Medical Sciences**

www.jaims.in

JAIMS

An International Journal for Researches in Ayurveda and Allied Sciences



Charaka
Publications

Indexed

Analytical study of *Salsaradi Gana Bhawit* (three times) *Shilajatu*

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ABSTRACT

Ayurveda the science of life gives importance to the balance between nature and human relationship; and Rasashastra, one of its associate wings can be considered to hold a key role since it deals in almost all the substances created by nature and marshals then for alleviating the diseases. The therapeutic efficacy of drugs depends upon the genuineness of raw material and right. *Shilajeet* is an important herbomineral drug among the *Maharasa*. Describing its importance Charaka has said, "there is hardly any curable disease which cannot be alleviated or cured with the aid of *Shilajeet*. Aim of study is to evaluate the Physico-chemical parameter of *Salsaradi Gana Bhawit Shilajatu*. *Shilajatu* and all raw drugs were obtained from P.G. Department, G.A.C.H. Patna and *Shilajeet Shodhana* was done by *Triphala Kwatha* and three times *Bhawana* by *Salsaradigana (Dravyas) Kwatha*. All samples were analyzed at Laboratory of Govt. Ayurveda College & Hospital Patna. It found that *Shilajatu* after *Bhawana* appeared as semi solid colour brownish black, soft in consistency and having typical smell.

Key words: *Shilajatu, Triphala, Salsaradi Gana, Analytical Study.*

INTRODUCTION

Now a day we are running in commercial era, due to huge population and demand the adulteration is done and short cuts are adopted at preparation level by commercial producer. So it is must to standardize our drug on Physico-chemical parameter. The unavailability of genuine raw material and presence of basic sub standard material is also there. It make most essential to use some physico-chemical parameter to evaluate drugs and also to meet challenges of disease as well as by workers of modern science also

regarding its action. The drugs which are manufactured should be well understood and interpreted in the light of modern chemistry to provide proper scientific background. *Bhawana* is an important process mentioned in Ayurveda which should be carried out before using in number of products.^[1]

Various drugs have been prescribed for *Bhawana* of different materials. *Shilajatu* is considered one of the important medicines of Ayurveda.^[2] It is Neither a plant or animal substance, it is a mineral pitch that oozes from the rocks of the Himalayas, as they become warm in the summer months. For *Shilajeet* to increase potency and safety *Bhawana* has been prescribed and different drugs are available for it, In present study *Shilajit Shodhana* by *Triphala Kwatha* and *Bhawana* by using decoction of *Salsaradi Gana*^[3] sample was taken, the present study is the Physico-chemical parameter evaluation of *Shudhha Shilajeet*, three times *Bhawit* with *Salsaradi Gana* sample. The samples were analyzed at Laboratory of Govt. Ayurveda College & Hospital, Patna.

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Submission Date: 23/07/2020 Accepted Date: 25/08/2020

Access this article online

Quick Response Code



Website: www.jaims.in

DOI: 10.21760/jaims.5.4.14

MATERIALS AND METHODS

- **Organoleptic Characters** : In this appearance, colour, touch, smell was observed.
- **Physico-chemical parameters** : of *Salsaradigana Bhawit* (three times) *Shilajatu*.

Samples were analyzed for different parameters like uniformity of weight, disintegration time; lose on drying, ash value, acid insoluble ash, Water soluble extractive.

1. Uniformity of weight of Capsules

Air Condition, Capsule Filling & Chemical Balance Empty Capsules were filled with *Salsaradi Gana Bhavit* (Three times) *Shilajeet*. *Shilajeet* in each capsule was 500 mg. 20 capsules selected at random, were weighed individually as well as together in a precision balance and average weight was determined. The highest and lowest weight of the capsules was noted. The variation in the weight of capsules in percentage was calculated from the average weight of the capsules.

2. Disintegration time

The disintegration time of the capsules was determined in a disintegration test apparatus by employing the procedure mentioned in I.P. The time required to disintegration of the capsules was noted.

For the other tests number of capsules were opened to use for the study.

1. Determination of pH

10 gm sample was taken, to it 100 ml distilled water was added, extracted for 2 hours with occasional shaking and filtered. The pH of the filtrate was noted in a 'pH meter'.

2. Loss on drying

This test was conducted to find out the moisture content of the drug. The loss on drying of the sample was determined by using the following method;

Procedure: About 1g of the sample, accurately weighed, was taken in a previously dried and weighed Petridis and it was dried in an oven at 105° C till (20 minutes) constant weight. Then the Petridis was taken out and weighed after self-cooling. The loss on weight

after drying was determined and from the weight loss the percentage of loss on drying was calculated and expressed as % w/w.

3. Determination of Ash value

The ash value was determined by taking about 1 gm accurately weighed, sample in a crucible and subjecting it to incineration at 450° C in a muffle furnace, until (for half an hour) it was freed from carbon. Later it was cooled and weighed. From the weight of residue the percentage of ash was calculated and expressed as % w/w.

4. Determination of acid insoluble ash

The ash obtained from above experiment was boiled with 25 ml of 6NHCl for five minutes, and the solution was filtered through ash less Watman filter paper number 41. It was washed with hot water, ignited and weighed. From the weight of the ash obtained, the percentage of acid insoluble ash was calculated.

5. Determination of water soluble extractive

About 5 gm, accurately weighed, sample was extracted with 100 ml water by keeping it for about 20 hours and filtered. From the filtrate 20 ml is transferred to a previously weighed evaporating dish, evaporated to dryness on a water bath and dried completely by heating in an oven till constant weight. The percentage of water soluble extractive was calculated from the weight of the residue obtained and expressed in terms of % w/w.

RESULTS AND DISCUSSION

As mentioned in the materials and methods section, Sample under study was analyzed chemically by employing various parameters and the results of the study are being presented in this section.

A) Organoleptic Characters : The observations found is shown in the table below;

Table 1: Organoleptic Characters of Raw *Shilajatu* and *Shilajatu* after *Bhawana*

Test	Raw <i>Shilajatu</i>	<i>Shilajatu</i> after <i>Bhawana</i>
Appearance	Stony	Semi solid

Colour	Brownish	Brownish Black
Touch	Hard	Soft
Smell	Gomutra	Typical

B) Physico-chemical parameters of Bhawit Shilajatu

Table 2: Bhavana data of weight variation & disintegration time of Shilajeet capsules

Parameter	Value
Wt. of 20 capsules	10.78gm
Average weight	0.532gm
Highest weight	0.589gm
Lowest weight	0.466gm
Disintegration time in N.S	38 min
Disintegration time in N/10 HCL	26 min
Microbial contamination	Not Found

In this Average weight, highest weight, lowest weight and Disintegration time was observed 0.532gm, 0.589gm, 0.466gm, and 38min & 26 min. respectively. Microbial contamination not found in sample.

Table 3: Analytical data of Salsaradi Gana Bhavita Shilajeet sample

Parameter	Value
pH	6.5
Loss on Drying, %w/w	12
Ash value, % w/w	6
Acid insoluble ash, % w/w	trace amount of Water
Soluble extractive,% w/w	94.8

pH of Salsaradi Gana Bhavita Shilajeet sample was 6.5, Loss on Drying, Ash value, and Water soluble extractive (% w/w) Value were, 12, 6, Trace and 94.8, respectively.

DISCUSSION

Shilajit (Latin: *Asphaltum punjabium*) is a thick sticky tar-like substance with a colour ranging from white to

dark brown (the latter is more common), which exudes from the rocks of mountains predominantly from Himalaya.^[4] *Shilajit* is composed many Humins mainly of fulvic acid, that account for around 60% to 80% of the total nutraceutical compound.^[5] *Shilajatu* after *Bhawana* become semi solid, brownish black in colour, soft in consistency and having typical smell. pH of *Bhawit Shilajatu* sample was 6.5. it is observed that after basic nature increase in sample. Humins are not soluble in water under any pH condition. Humic acid is soluble in water under alkaline conditions. Fulvic acid is soluble in water under different pH conditions, and because of its low molecular weight it is well absorbed in the intestinal tract and eliminated within hours from the body.^[6] Loss on drying was performed to find out the moisture content of the samples value was 12w/w. Ash values are helpful to determine the quality as well as purity of a crude drug, especially when the drug is present in powdered form it determine the minerals content of drug.^[7] Ash value is useful in determining authenticity and purity of sample and also these values are important qualitative standards, Subtract the weight of insoluble matter from the weight of the ash; the difference in weight represents the water- soluble ash,^[8] *Shilajatu* is water soluble in nature.

CONCLUSION

Shilajit is a potent and very safe medicine, potentially able to prevent several diseases. In the present study the sample were analyzed for different parameters of organoleptic characters like Appearance, Colour, Touch, Smell and Physio- chemical parameters like uniformity of weight, Disintegration time, PH, Loss on Drying, ash value, acid insoluble ash, water extractive values. In many studies it is found that *Bhawana* increase the palatability, absorption and potency of drug. Physico-chemical parameter of drug help to find the safety and shelf life of drug.

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How to cite this article: Munna Kumar, Ajay Kumar Singh, Uma Shankar Chaturvedi, Mukesh Kumar. Analytical study of Salsaradi Gana Bhawit (three times) Shilajatu. J Ayurveda Integr Med Sci 2020;4:82-85. <http://dx.doi.org/10.21760/jaims.5.4.14>

Source of Support: Nil, **Conflict of Interest:** None declared.
